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Auburn University Bulletin

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**Auburn's bulletin provides a listing of academic programs,
degree requirements and details about policies.**

A Land-Grant University

Auburn University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award Bachelor's, Master's, Educational Specialist and Doctor's degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Auburn University.

Auburn University is an equal opportunity educational institution/employer.

Vision and Mission

The following statement of vision and mission was developed by the Task Force on Mission established in 1995 and was approved by the Board of Trustees on March 20, 1997 and amended May 7, 2004, and reaffirmed on February 1, 2013.

Vision

Auburn University will emerge as one of the nation's preeminent comprehensive land-grant universities in the 21st century. Central to all its functions will be the university's historic commitment of service to all Alabamians as the state becomes a part of a global society with all of its challenges and opportunities. The university will be widely recognized for the quality of its undergraduate, graduate and professional educational programs, the effectiveness of its research and outreach programs and the broad access to the university provided through the innovative use of information technology. The university will ensure the quality of its programs through the careful focusing of its resources in areas of institutional strengths. One constant will remain unchanged at the university is that intangible quality Auburn men and women call the "Auburn spirit."

Mission

Auburn University's mission is defined by its land-grant traditions of service and access. The university will serve the citizens of the State through its instructional, research and outreach programs and prepare Alabamians to respond successfully to the challenges of a global economy. The university will provide traditional and non-traditional students broad access to the institution's educational resources. In the delivery of educational programs on campus and beyond, the university will draw heavily upon the new instructional and outreach technologies available in the emerging information age.

As a comprehensive university, Auburn University is committed to offering high-quality undergraduate, graduate, and professional education to its students. The university will give highest priority for resource allocation for the future development of those areas that represent the traditional strengths, quality, reputation, and uniqueness of the institution and that continue to effectively respond to the needs of students and other constituents. Consistent with this commitment, the university will emphasize a broad and superior undergraduate education that imparts the knowledge, skills, and values so essential to educated and responsible citizens. At the same time, the university will provide high-quality graduate and professional programs in areas of need and importance to the state and beyond. To accomplish these educational goals, Auburn University will continue to compete nationally to attract a faculty distinguished by its commitment to teaching and by its achievements in research, both pure and applied. The university will strive to attract a faculty that will bring distinction and stature to the undergraduate, graduate, and professional programs offered by the university.

Because research is essential to the mission of a land-grant university, Auburn University will continue development of its research programs. The primary focus of this research will be directed to the solution of problems and the development of knowledge and technology important to the state and nation and to the quality of life of Alabama citizens. The university's research programs will make important contributions to instructional programs through the involvement of graduate and undergraduate students and the renewal of the faculty. Research will also provide the knowledge base for outreach programs. In carrying out its research mission, the university will emphasize established areas of strength and will focus available resources in those areas of research and doctoral study that are, or have the potential to develop into nationally and internationally recognized centers of excellence.

Extension and outreach programs are fundamental to the land-grant mission because these programs directly affect the lives of all citizens in the state. The university will maintain the strengths of its traditional outreach programs and will increasingly involve the broader university in outreach programs that respond to the changing needs of the society in which we live. The university will continue to seek new and innovative ways to reach out to the people it serves.

Auburn University's mission is expressed through instruction, research, and outreach.

Instruction

Auburn University is committed to excellence in teaching at both the undergraduate and the graduate level. This commitment has long been reflected in the diversity of course offerings and in the variety of instructional approaches that are offered. Increasingly, electronic technology is providing instructors with innovative and creative teaching strategies. The high academic aptitude of the university's incoming students also makes accelerated learning possible.

The liberal arts and sciences - introduced in the university's nationally recognized Core Curriculum - are the heart of Auburn's undergraduate programs. They lay the foundation not only for advanced study and career preparation but also for the development of a more responsible citizenry through students' personal and intellectual growth. The Core Curriculum provides students with a common set of experiences, develops their powers of analysis and communication, and encourages their understanding of human culture and the natural world. Auburn has won recognition for its high academic quality.

Auburn offers baccalaureate degrees in more than 130 areas across the spectrum of disciplines and provides the state's only publicly supported programs in many fields, including several in agriculture, architecture, building science, forestry, pharmacy and veterinary medicine. Particularly strong baccalaureate programs can be found in the Colleges of Business, Education, Engineering, Liberal Arts, and Sciences and Mathematics. For many years, ROTC programs at Auburn have also been nationally prominent in providing leadership for the military.

While Auburn has long been widely recognized for the quality and diversity of its undergraduate and first-professional programs, more recently expanding research accomplishments have broadened the scope and raised the prominence of the university's graduate programs. Today Auburn supports a comprehensive graduate school, providing master's level programs in more than 64 areas and awarding the doctorate in more than 40 fields. In many fields it offers the state's only doctoral program. For many years the university has enjoyed strong graduate programs in agriculture, the biological and physical sciences, education, engineering, forestry, the human sciences, mathematics, pharmacy and veterinary medicine. More recently, excellent graduate programs have also emerged in business, the liberal arts and the social sciences. The university anticipates expanded research activity and graduate instruction, especially in agriculture and the biological sciences, in engineering and the physical sciences, in veterinary and pharmacological sciences, as well as in business and education.

Research

Research is the means through which new knowledge is created and new information is developed. As such, research at Auburn University is an essential link in its three-pronged mission of instruction, research and outreach. Successes among the varied research activities within each of our 12 academic schools and colleges continue to bolster Auburn's reputation among the nation's top universities.

Auburn's role as a land-grant university emphasizes strong research programs in agriculture, natural resources, the life sciences, engineering and the physical sciences. Strong and expanding research programs exist in agriculture; architecture, design and construction; business; education; engineering; forestry and wildlife sciences; human sciences; the liberal arts; nursing; pharmacy; science and mathematics; and veterinary medicine.

Whether in the laboratory, the field, or in the classroom, Auburn University's research endeavors are diverse, comprehensive, and collaborative, focusing on developing solutions to major problems that confront humankind and on expanding the base of knowledge and technologies available to improve our quality of life. Additionally, major efforts to increase the protection and commercialization of intellectual properties are central to Auburn's continual drive for improvements in its research mission.

These efforts mesh to create a research environment that enhances the state's economic, cultural, social and intellectual development and, at the same time, undergirds the university's undergraduate, graduate, professional and outreach programs.

In support of these efforts, the Auburn University Huntsville Research Center interfaces with agencies and industries in order to increase research funding, raise our national profile, as well as bring new ideas and products to government, industries and consumers. A high-tech economic engine for Alabama, Huntsville executes billions of dollars in federal contracts yearly. Increasingly, these

contracts require the collaboration of a broad array of disciplines. The Auburn University Huntsville Research Center enables North Alabama business, industry, and government to access the capabilities of one of the Southeast's major research institutions.

Lastly, the Auburn Research and Technology Foundation (ARTF) and the Auburn Research Park were developed to further integrate research and the business community to complement the economic development and research initiatives of the university. In addition to facilitating the commercialization of university technologies and industry-university partnerships, the research park offers employment opportunities for Auburn's students and graduates.

Outreach

As a land-grant institution, Auburn University has a mission of Outreach – engaging its expertise beyond campus to improve quality of life across Alabama, nationally, and even internationally. More importantly, outreach provides opportunities to establish mutually beneficial partnerships between Auburn University and the communities that it serves. Through outreach, citizens benefit from greater access to Auburn's high quality educational resources. Community interaction benefits the university as well, providing valuable insights and information for teaching and research, and enhancing the institution's relevance to the broader society.

Outreach focuses on three major areas of activity – lifelong learning, expert assistance, and civic engagement. Auburn University's lifelong learning programs offer individuals of all ages opportunities for professional continuing education as well as skills development and personal enrichment. The university provides an array of expert assistance and consultation services to improve operations in government, education and business institutions. Finally, civic engagement projects help bond Auburn University and communities in a variety of public service activities.

University faculty members are involved significantly in the institution's outreach initiatives. Auburn students have a role in the outreach mission too, and there are many innovative ways for students and their faculty mentors to engage in service activities locally, regionally, and even internationally. The Office of the Vice President for University Outreach provides administrative leadership and support for outreach work campus wide. Units reporting to that office include the Center for Governmental Services, the Encyclopedia of Alabama, the Economic and Community Development Institute, Faculty Engagement, the K-12 Strategic Initiative, the Office of Professional and Continuing Education, the Office of Public Service, and the Osher Lifelong Learning Institute. University Outreach is also home to the AUBURNSERVES initiative (www.auburnserves.com (<http://www.auburnserves.com>)), a collaboration of Auburn's faculty, academic units, campus organizations, and community partners in the development of new service learning, experiential education and engagement opportunities for students.

There are more than 75 outreach units and program initiatives within the university's schools and colleges. Some of these include the Caroline Marshall Draughon Center for the Arts and Humanities in Liberal Arts, the Auburn Technical Assistance Center in Business, the Truman Pierce Institute in Education, Engineering Continuing Education, and the Rural Studio in Architecture. Auburn University also serves as the headquarters for Alabama's Cooperative Extension System, which serves all 67 Alabama counties with educational programs and services provided by faculty specialists and local agents.

From this base of organizational and faculty resources, Auburn hosts a diverse range of outreach activities. Annually, the university produces some 1,000 conferences, non-credit courses and training programs, with registrations averaging 50,000. More than half of these programs are approved to offer continuing education units (CEUs). Auburn conducts hundreds of technical assistance projects annually for industrial and governmental clients across the state, representing millions of dollars in direct impact from improved processes, cost savings, and investments. Auburn supports roughly 100 outreach facilities and research sites throughout Alabama, giving the university a statewide community presence greater than any other educational institution. This makes Auburn's outreach resources highly accessible to citizens.

Lists of professional courses are available at the www.auburn.edu/outreach/opce website. A comprehensive directory of Auburn's outreach resources and contacts is available at www.auburn.edu/outreach.

General Information

AUBURN UNIVERSITY, chartered in 1856, is located in Auburn, Alabama, and traces its beginning to the East Alabama Male College, a private liberal arts institution whose doors opened in 1859. From 1861 to 1866 the college was closed because of the Civil War. The college had begun an affiliation with the Methodist Church before the war. Due to financial straits, the church transferred legal control of the institution to the state in 1872, making it the first land-grant college in the South to be established separate from the state university. It thus became the Agricultural and Mechanical College of Alabama.

Women were admitted in 1892, and in 1899 the name again was changed, to the Alabama Polytechnic Institute. In 1960, the school acquired a more appropriate name, Auburn University, a title more in keeping with its location, size and complexity. The institution has experienced its greatest growth since World War II, and today enrolls more than 25,000 students. The majority are Alabama residents.

Auburn University Montgomery was established as a separately administered branch campus in 1967. The institution has developed rapidly, especially since moving to a 500-acre campus east of Montgomery in 1971. Current enrollment at AUM exceeds 4,900.

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Auburn University Calendar 2013-2014

Auburn University reserves the right to make adjustments to this calendar

- Undergraduate Calendar
- Graduate Calendar

Undergraduate Calendar 2013-2014

2013 Summer Semester

Date	Event
May 16	Classes Begin
May 27	Memorial Day (Holiday)
June 19	Mid-Semester (24th Class Day)**
June 20	No Classes - Mid Semester-I Reading Period
June 21	No Classes - Mid Semester-I Exam Period
July 4	Independence Day (Holiday)
July 26	Classes End
July 27	Study/Reading Day
July 29 - 31	Final Exam Period
Aug. 3	Graduation

2013 Summer Mini-Semester I

Date	Event
May 16	Classes Begin
May 27	Memorial Day (Holiday)
June 19	Classes End
June 20	Study/Reading Day
June 21-22	Final Exam Period

2013 Summer Mini-Semester II

Date	Event
June 24	Classes Begin
July 4	Independence Day (Holiday)
July 26	Classes End
July 27	Study/Reading Day
July 29-31	Final Exam Period

2013 Fall Semester

Date	Event
Aug. 21	Classes Begin
Sept. 2	Labor Day
Sept. 11	15th Class Day*
Oct. 10	Mid-Semester (36th Class Day)**/+

Oct. 17	41st Class Day++
Nov. 25-29	Thanksgiving Break
Dec. 6	Classes End
Dec. 7-8	Study/Reading Days
Dec. 9-13	Final Exam Period
Dec. 14	Graduation

- * Last day to withdraw from a course with no grade assignment
- ** Last day to withdraw from a course with no grade penalty
- + Student deadline for request to move finals
- ++ Student deadline for requesting Associate Dean's permission to move finals.

2014 Spring Semester

Date	Event
Jan. 8	Classes Begin
Jan. 20	Martin Luther King, Jr. Day
Jan. 29	15th Class Day*
Feb. 27	Mid-Semester (36th Class Day)**/+
Mar. 6	41st Class Day++
Mar. 10-14	Spring Break
Apr. 25	Classes End
Apr. 26-27	Study/Reading Days
Apr. 28 - May 2	Final Exam Period
May 3-4	Graduation

- * Last day to withdraw from a course with no grade assignment
- ** Last day to withdraw from a course with no grade penalty
- + Student deadline for request to move finals
- ++ Student deadline for request to move finals to Associate Deans

Graduate Calendar 2013-2014

Auburn University reserves the right to make adjustments to this calendar

Summer 2013

Date	Event
May 16	Classes Begin
May 27	Memorial Day Holiday
June 6	Last day to submit Dissertation First Submission Approval Form with University Reader info and dissertation in PDF form for format check
June 17-21	Submission of master's thesis in PDF form for format check
June 19	Mid-semester (24th class day)
July 4	Independence Day Holiday
July 10	Last day to submit Form 9 (Thesis Master's Final Examination Form), ETD Final Approval Form, and electronic thesis
July 12	Last day for doctoral final defense and non-thesis master's (Form 8) final oral examinations

July 18	Last day for submission of Form Z, ETD Final Approval Form, electronic dissertation, publishing agreement, and SED notification of completion
July 26	Classes end for semester
July 29-31	Final examinations for semester
Aug. 3	Graduation and last day for students to request graduation checks and submit approved Plan of Study for Fall 2013 graduation

Fall 2013

Date	Event
Aug. 21	Classes begin
Sept. 2	Labor Day Holiday
Sept. 11	15th class day (last day to register for Fall 2012 graduation)
Sept. 23	Last day to submit Dissertation First Submission Approval Form with University Reader info and dissertation in PDF form for format check
Oct. 7-11	Submission of master's thesis PDF form for format check
Oct. 10	Mid-semester and last day to drop classes
Nov. 8	Last day to submit Form 9 (Thesis Master's Final Examination Form), ETD Final Approval Form, and electronic thesis
Nov. 11	Last day to clear incomplete grades from Spring 2012
Nov. 11	Last day for doctoral final defense and master's non-thesis (Form 8) final oral examinations
Nov. 25-29	Thanksgiving Break
Nov. 27	Last day for submission of Form Z, ETD Final Approval Form, electronic dissertation, publishing agreement, and SED notification of completion
Dec. 6	Classes end for semester
Dec. 7-8	Study/reading days
Dec. 9-13	Final examinations for semester
Dec. 14	Graduation and last day for students to request graduation checks and submit approved Plan of Study for Spring 2014 graduation

Spring 2014

Date	Event
Jan. 8	Classes begin
Jan. 20	Martin Luther King, Jr. Day
Feb. 21	Last day to submit Dissertation First Submission Approval Form with University Reader info and dissertation in PDF form for format check
March 3-7	Submission of Master's Thesis in PDF form for format check
March 10-14	Spring Break
April 3	Last day to submit Form 9 (Thesis Master's Final Examination Form), ETD Final Approval Form, and electronic thesis
April 11	Last day for doctoral final defense and non-thesis (Form 8) master's final oral examinations
April 17	Last day for submission of doctoral FORM Z, ETD Final Approval Form, electronic dissertation, publishing agreement, and SED notification of completion

April 26

Classes end

May 3-4

Graduation and last day for students to request graduation checks and submit approved Plan of Study for Summer 2014 graduation

Auburn University Libraries

Auburn University Libraries consists of three libraries on campus. The largest library on campus is the Ralph Brown Draughon Library, a 377,000 square-foot structure with seating for 4,850. Branch libraries are located in the College of Veterinary Medicine and the College of Architecture, Design and Construction. Auburn University is one of the 125 universities that are members of the Association of Research Libraries. AU Libraries serves as a Federal Depository Library for Alabama.

Collections include more than 3.4 million volumes, more than 2.7 million items in microform, and 152,000 maps. The libraries license access to over 200 electronic databases, including online full-text access to over 5,000 scholarly journals and receive more than 57,000 current serials, including publications issued by the U.S. government.

The libraries offer an online catalog to library holdings at www.lib.auburn.edu, expedited electronic document delivery to faculty and students via the AubieExpress service, delivery of books or documents held at other libraries via Interlibrary Loan, and expedited purchasing of titles requested by faculty or students via Purchase Request.

The Draughon Library contains the Learning and Study Commons and over 1400 power outlets to allow students to use personal laptops while in the library; carrels for faculty and graduate student use; a Media and Digital Resource Laboratory to provide access to the latest multimedia hardware and software along with on-site expertise to assist users, and over 200 university and public computer workstations - including laptop computers that can be checked out to faculty and students.

Reference service and library use instruction is provided by subject-specialist librarians. Draughon Library also features an expanded assistive technology workstation area on the second floor that hold three workstations with specialized software for helping vision-impaired patrons use library and Internet resources.

The Special Collections and Archives Department collects rare and unique material related to the history, literature and natural history of Alabama; the American Civil War; the history of aviation; and family history in the southeastern United States.

Library borrowing privileges are extended to enrolled students; members of the administrative, research, instructional and extension staffs of the university; student, faculty and staff spouses; and active alumni association members.

Enrollment Statistics

- College of Agriculture
- College of Architecture, Design and Construction
- College of Business
- College of Education
- Samuel Ginn College of Engineering
- College of Forestry and Wildlife Sciences
- College of Human Sciences
- College of Liberal Arts
- School of Nursing
- Harrison School of Pharmacy
- College of Sciences and Mathematics
- College of Veterinary Medicine
- Interdepartmental Programs and Transient Students
- All University
- Enrollment by Alabama County
- Enrollment by State

- U.S. Territories and Possessions
- Enrollment by Foreign Country

COLLEGE OF AGRICULTURE - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Agricultural Business & Economics (AGEC)	100	26	5	4	135
Agricultural Communications (AGCO)	10	22			32
Agronomy & Soils (AGRN)	61	11	22	15	109
Animal Sciences (ANSC)			8	13	21
Animal Sciences - Equine Sciences option (ANEQ)	3	58			61
Animal Sciences - Pre-Veterinary option (ANPV)	90	311			401
Animal Sciences - Muscle Foods option (ANMF)	4	7			11
Animal Sciences - Prod./Mngt. option (ANPM)	9	23			32
Applied Economics (APEC)			12	14	26
Entomology (ENTM)			11	7	18
Environmental Science (ENVI)	23	28			51
Food Science (FDSC)	2	7			9
Food Sci Opt Grad-Poultry Sci (FDSCG)			5	7	12
Fisheries & Allied Aquacultures (FISH)	39	4	54	36	133
Horticulture (HRTB/ HRTM/HRTD)	102	30	21	7	160
Plant Pathology (PLPH)			8	5	13
Poultry Science (PLTB/PLTM/PLTD)			4	6	10
Poultry Science - Pre-Veterinary option (POPV)	11	11			22
Poultry Science - Process. & Prod. option (POPP)	9	7			16
Poultry Science - Production option (POPR)	2	1			3

Undeclared

Agriculture (UNAG)

TOTAL	476	535	150	114	1,275
AGRICULTURE					

COLLEGE OF ARCHITECTURE, DESIGN AND CONSTRUCTION - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Architecture (ARCH)	98	79			177
Building Science (BSCI)	164	12			176
Building Science - Construction option (BSCC)			33	5	38
Community Planning (CPLN)			17	15	32
Design-Build (DBLD)					
Environmental Design (ENVD)	28	31			59
Graphic Design (GDES)	28	98			126
Interior Architecture (ARIA)	31	16			47
Integrated Design and Construction (INDC)			7	3	10
Industrial Design (INDD)	90	38	16	6	150
Landscape Architecture (LAND)			16	14	30
Pre-Architecture (PARC)	48	45			93
Pre-Building Science (PBSC)	160	11			171
Pre-Graphic Design (PGDE)	15	60			75
Pre-Industrial Design (PIND)	15	8			23
Pre-Landscape Architecture (PLND)					
TOTAL	677	398	89	43	1,207
ARCHITECTURE					

COLLEGE OF BUSINESS - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Accounting (ACCT)	209	180	44	52	485
Aviation Management (AVMG)	43	2			45
Business Administration (BSAD/BUSA/BUSP/BUSX)	100	41	277	85	503

Economics/BSBA (ECON)	6				6
Economics/BS (ECNB)	2	1			3
Entrepreneurship & Family Business (ENFB)	47	19			66
Finance (FINC/FINM)	218	71	21	5	315
Human Resources Management (HRMN)	18	39			57
Information Systems Management (ISMN)	64	7			71
International Business (IBUS)	43	49			92
Management Information Systems (MIS)			30	7	37
Management (MNGT)	81	27	17	11	136
Marketing (MKTG)	116	134			250
Pre-Business (PREB)	1,037	483			1,520
Pre-Bus. - Accounting (PBAC)					
Pre-Bus. - Aviation Management (PBAM)					
Pre-Bus. - Bus. Admin. (PBBA)					
Pre-Bus. - International Business (PBIB)					
Pre-Bus. - Marketing (PBMT)					
Professional Flight (AVMF)	31	2			33
Business Undeclared (UNBU)					
Logistics (LOGT)					
Supply Chain Management (SCMN)	170	24			194
TOTAL BUSINESS	2,185	1,079	389	160	3,813

COLLEGE OF EDUCATION - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Admin. & Supervision of Curriculum (ASCG)			6	24	30
Admin. of Elementary & Secondary (AESS/AESG)			28	34	62
Admin. of Higher Education (AHEG)			48	58	106

Adult Education (ADEB/ADES/ADEG)		26	56	82
Adult Education Specialist (ADNS)				
Agriscience Education (CAGB/ CAGG/CAGS)	19	9	3	31
Biology Education (CBIB/CBIG)		2		2
Business & Marketing Educ. (CBMB/CBMS/ CBMG)		3	8	12
Business Education (CBEB/CBEG)	1	93		94
Career Technology (CTCG)		15	5	20
Chemistry Education (CCHB/CCHG)				
Clinical Medical Health Counseling (CMHC)		2	28	30
Collaborative Teacher Spec. Educ. (RSCB/RSCG)	8	36	4	26
Community Agency Counseling (CCAG)				74
Counseling Psychology (COPG)		6	29	35
Coun Psych.-School Psychology (CSPG)				
Counselor Education- Supervisor (CEDG)		7	21	28
Early Childhood Education (CECB/ CECS/CECG)		1	12	13
Early Childhood Specialist Educ. (RSEB/RSEG)		20	1	9
Educational Psychology (EPGG)		9	20	29
Educational Found., Leadership & Tech. (EFLG)				
Elementary Education (CEEB/ CEES/CEEG)	1	140	2	39
English Language Arts Educ. (CEGB/ CEGS/CEGG)	9	36	4	6
English Second Language Education (CESG)			1	6
				7

Exercise Science (HESB/HESG)	39	71	30	31	171
Fitness Conditioning and Performance Option (FCPB)	31	27			58
French Education (CFRB/CFRS/CFRG)			2	6	8
General Social Science Education (CSTB/CSTG/CSTS)	29	14	5	2	50
General Science Education (CSIB/ CSIG)	4	12	4	3	23
German Education (CGRB)	1	1			2
Health Promotion (HEPB/HEPG)	11	9			20
Kinesiology (KNSG)			18	12	30
Library Media (MSES/MSEG)				6	6
Mathematics Education (CMAB/ CMAS/CMAG)	6	27	3	9	45
Movement Skills Analysis (MVSA)				1	1
Music Education - Instrumental (CMIB/ CMIS/CMIG)	13	8	14	5	40
Music Education - Instru./Vocal (CMCB)	1	1			2
Music Education - Vocal (CMVB/CMVS/ CMVG)	2	4	2	9	17
Physical Activity and Health (PAHB/PAHG)	53	47	4		104
Physical Education (HPNB/HPNG/HPEG)	6	4	5	4	19
Physics Education (CPHB/CPHG)					
Pre-Early Childhood Education (GCEC)					
Pre-Elementary Education (GCEE)					
Pre-Agriscience Education (PCAG)	9	3			12
Pre-Business and Marketing Education (PCBM)	4	1			5
Pre-Chemistry Education (PCCH)	2	3			5
Pre-Early Childhood Education (PCEC)		88			88

Pre-Elementary Education (PCEE)	7	203		210
Pre-English Language Arts Education (PCEG)	4	46		50
Pre-French Education (PCFR)		3		3
Pre-German Education (PCGR)		1		1
Pre-Mathematics Education (PCMA)	15	41		56
Pre-Music Education Instrumental (PCMI)	17	4		21
Pre-Music Education Vocal (PCMV)	5	1		6
Pre-Music Education Combination Instru/ Vocal (PCMC)	7	7		14
Pre-Music Ed Comb Instru/Vocal				
Pre-Science Education - General (PCSI)	5	15		20
Pre-Spanish Education (PCSN)	2	6		8
Pre-Social Science Education (PCST)	33	16		49
Pre-Exercise Science (PHES)	62	137		199
Pre-Physical Education (PHPN)	26	10		36
Pre-Physics Education (PCPH)	1			1
Pre-Special Ed Collab Teacher (PRSC)	8	30		38
Pre-Special Ed Early Childhood (PRSE)	2	21		23
Program Evaluation (PGEV)			1	1
Reading Education (CNRS/CNRG)			8	8
Rehabilitation & Special Education (RSSG)			10	23
Rehabilitation Service 6 Education (RSRB/ RSRG)	6	61	11	31
Rehabilitation Leadership Management (RMGT)			1	2
School Counseling (CPSG)			2	16
				3
				18

School Psychology
(CPGS)

Spanish Education (CSNB/CSNS/CSNG)	1	5	2	17	25
Teaching Eng Sec/ Foreign Lang (TESF)			3	3	6
Graduate Certificate (GCRT)					
Undeclared Education (UNED)			1	1	2
TOTAL EDUCATION	450	1,255	296	578	2,579

SAMUEL GINN COLLEGE OF ENGINEERING - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Aerospace Engineering (AERO)	143	26	41	6	216
Biosystems Engineering (BSEN)	31	9	15	8	63
Biosystems Engineering - Forest option (FOEN)	9				9
Chemical Engineering (CHEN)	188	91	55	26	360
Civil Engineering (CIVL)	230	46	81	28	385
Computer Science and Software Engineering (COMP)			101	28	129
Computer Science (CSCI)	59	9			68
Biosystems Engineering - Ecological Option (ECEN)	10	10			20
Electrical Engineering (ELEC)	170	27	132	39	368
Electrical Engineering - Computer option (ECPE)	65	10			75
Fiber Engineering - Fiber Option (FREN/ FBEN)	21	3			24
Industrial & Systems Engineering (INSY)	132	56	96	33	317
Materials Engineering (MATL)	13	7	20	10	50
Mechanical Engineering (MECH)	478	40	104	12	634
Occupational Safety Ergonomics (OSFE)			1	1	2
Pre-Aerospace Engineering (PAE)	176	19			195

Pre-Biosystems Engineering (PBSE)	40	10		50
Pre-Biosystems Engr. 5 - Forestry option (PFOE)	5			5
Pre-Chemical Engineering (PCHE)	187	93		280
Pre-Civil Engineering (PCE)	199	39		238
Pre-Computer Science (PCPS)	112	30		142
Pre-Elec. & Comp. Engr. - Hardware option (PECE)	68	3		71
Pre-Electrical Engineering (PEE)	145	15		160
Pre-Ecological - Biosystems Engineering (PECN)	3	4		8
Pre-Engineering (PN)	119	37		156
Pre-Industrial Engineering (PIE)	68	33		101
Polymer Engineering - Polymer Option (PLEN/TXMT)	12	11		23
Pre-Materials Engineering (PMTL)	11	4		15
Pre-Mechanical Engineering (PME)	376	46		422
Pre-Polymer & Fiber Engineering (PPFN)	18	3		21
Pre-Software Engineering (PSWE)	97	11		108
Pre-Wireless Engr. - Hardware option (PWRE)	21	1		22
Pre-Wireless Engr. - Software option (PWRS)	26	1		27
Polymer & Fiber Engineering (PFEN)			11	5
Software Engineering (SWEN)	146	23		169
Undeclared - Engineering (UNEN)	1			1
Wireless Engr. - Hardware option (WIRE)	31			31

Wireless Engr. - Software option (WIRS)	25	4			29
TOTAL ENGINEERING	3,436	721	657	196	5,010

COLLEGE OF FORESTRY AND WILDLIFE SCIENCES - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Economics PhD in Forestry (ECFY)			1	1	2
Forestry (FORB/ FORG)	51	3	25	15	94
Natural Resources (FOWG)			1		1
Pre-Forestry (PFOR)	40	2			42
Undeclared - Forestry 1 & Wildlife Sciences (UNFW)					1
Natural Resources Management (NATR)	8	3			11
Wildlife Sciences (WLDB/WLDG)	21	8	6	9	44
Wildlife Sciences-Pre Vet (WLPV)	4	24			28
Wildlife Ecology & Management (WLDE)	81	40			121
TOTAL FORESTRY & WILDLIFE SCIENCES	206	80	33	25	344

COLLEGE OF HUMAN SCIENCES - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Apparel - Merchandising option (APME)	5	171			176
Apparel - Prod. Design & Prod. Mngt. option (APDP)	2	68			70
Consumer Affairs (CAHS)			1	17	18
Hotel & Restaurant Management (HRMT)	46	146			192
Human Development & Family Studies (HDFS)	16	298	7	24	345
Hum. Dev./Fam. Studies - Early Child. Ed. (HDFE)		11			11
Hum. Dev./Fam. Studies - Pre - Early Child. Ed. (HDFX)		17			17

Hum. Dev./Fam. Studies - Mar & Fam Therapy (HDFT)			1	11	12
Interior Design (INDS)	2	74			76
Human Sciences (INDX)	2	50			52
Nutrition (NTRI)			13	29	42
Nutrition - Dietetics (NTDI)	13	196			209
Nutrition - Hotel and Rest Mngt Option (NHRM)			2	3	5
Nutrition & Food Science - Food Sci. option (NFFO)					
Nutrition & Food Science - Nutr. Sci. option (NSPM)	8	49			57
Nutrition & Food Science (NUFS)					
Undeclared - Human Science (UNHS)					
TOTAL HUMAN SCIENCES	94	1,080	24	84	1,282

COLLEGE OF LIBERAL ARTS - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Anthropology (ANTH)	7	46			53
Applied Economics (AECL)			7	4	11
Art - Fine Arts (ARTF)	12	49			61
Art - Liberal Arts (ATLA)	20	50			70
Art History (ARTH)		21			21
Audiology (AUDY)			4	23	27
Clinical Psychology (CPSY)			13	26	39
Communication (COMM)	38	86	11	25	160
Communication Disorders (CMDs)		108	1	50	159
Criminology (CRIM)	3	2			5
Economics - Liberal Arts (ECLA/ECNL)	88	19	8		115
English (ENGL)	8	12	18	48	86
English-Creative Writing (EGLC)	28	36			64
English-Literature (EGLL)	27	65			92

English-Prof Writing/ Literacy (EGLP)	8	28		36
English - Technical & Prof. Communication (ENGT)			7	11
French (FLFR)	3	11		14
German (FLGR)	2	5		7
Health Services Administration (HADM)	15	32		47
History (HIST)	133	53	41	19
International Trade - French (FLFT)	1	6		7
International Trade - German (FLGT)	3	3		6
International Trade - Spanish (FLST)	10	13		23
Journalism (JRNL)	24	31		55
Mass Communication (RTVF)	56	62		118
Music - Liberal Arts (MULA)	13	16		29
Non-Profit Org/Comm Governance (NPCG)			1	1
Philosophy (PHIL)	21	10		31
Philosophy - Religious Studies option (RELG)	2			2
Political Science (POLI)	228	124		352
Pre-Communication Disorders (PCMD)		107		107
Pre- Communication (PCOM)	24	84		108
Pre-Graphic Design (PATG)				
Pre-Anthropology (PATR)	3	9		12
Pre-Economics (PECO)	10	3		13
Pre-English (PEGL)	15	32		47
Pre-German International Trade (PFGT)				
Pre-French (PFLF)	1			1
Pre-Spanish (PFLS)	1	5		6
Pre-French International Trade (PFLT)	1	1		2

Pre-Spanish International Trade (PFST)	2				2
Pre-Health Services Administration (PHDM)	20	34			54
Pre-History (PHST)	34	10			44
Pre-Journalism (PJRL)	28	54			82
Pre-Liberal Arts Undeclared (PLAU)	36	33			69
Pre-Music (PMSC)	9	6			15
Pre-Public Relations (PPCR)	24	115			139
Pre-Philosophy (PPHL)	3				3
Pre-Political Science (PPOL)	9	7			16
Pre-Public Administration (PPUA)	3	1			4
Pre-Religious Studies (PRLG)	1	1			2
Pre-Broadcast Journalism (PRTV)	57	72			129
Pre-Sociology (PSOC)	6	6			12
Pre-Social Work (PSWK)	5	80			85
Pre-Psychology (PPSY)	14	52			66
Psychology (PSYC)	145	401	2	6	554
Psychology - Cognitive and Behavioral (CABS)			11	12	23
Psychology - Experimental (PSYE)					
Psychology - Organizational (PSYO)			7	12	19
Public Admin. & Public Policy (PUBP)			29	29	58
Public Administration (PUBA)	71	26	21	20	138
Public Relations (PUBR)	5	25			30
Public Relations Communication (PRCM)	9	96			105
Social Work (SOWO)	3	32			35
Sociology (SOCY)	44	47			91
Spanish (FLSP)	8	26	11	14	59

Theatre (THEA)	4	5			9
Theatre - Liberal Arts (THLA)	14	34			48
Undeclared Liberal Arts (UNLA)	37	49			86
TOTAL LIBERAL ARTS	1,387	2,322	192	299	4,200

COLLEGE OF NURSING - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Nursing Science (NURS)	11	168			179
Pre-Nursing Science (PNUR)	44	438			482
Nursing-Nursing Education (NEDC)				7	7
Nurse Prim Care Practitioner (NUPC)			6	41	47
TOTAL NURSING	55	606	6	48	715

HARRISON SCHOOL OF PHARMACY - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Pharmaceutical Sciences (PYSC)			12	12	24
Pharmacy (PHAR)			184	412	596
Pharmacy Care Systems (PYCS)			1		1
TOTAL PHARMACY			197	424	621

COLLEGE OF SCIENCES AND MATHEMATICS - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Applied Mathematics (AMTH)	19	13	3	2	37
Applied Math. - Actuarial Science option (ACTU)	22	23			45
Applied Math. - Discrete Science option (ADST)					
Biochemistry (BCHM)	29	23			52
Biological Sciences (BIOL)			58	49	107
Biomedical Sciences (BMSC)	198	279			477
Botany (BTNY)	4	2			6
Chemistry (CHEM)	22	17	36	25	100
Chemistry (CHMA)	34	28			62

Discrete & Statistical Science (DISC/DSTM/DSTD)	2	5	7	5	19
Geography (GEOG)	25	3	5	6	39
Geology (GEOL)	32	9	14	6	61
Laboratory Technology (LABT)	12	39			51
Marine Biology (MARB)	43	58			101
Mathematics (MATH)	33	37	68	23	161
Medical Technology (MEDT)	4	5			9
Microbiology (MICB)		1			1
Microbial Biology - Cellular/Molecular option (MCCM)	17	39			53
Microbial Biology - Microbiology option (MCMB)	62	92			154
Molecular Biology (MOLB)					
Physics (PHYS)	39	9	44	11	103
Undeclared Sciences & Mathematics (UNSM)	599	975			1,574
Zoology (ZOOL)	45	127			172
TOTAL SCIENCES & MATHEMATICS	1,238	1,784	235	127	3,384

COLLEGE OF VETERINARY MEDICINE - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Biomedical Sciences (BMSV)			23	46	69
Veterinary Medicine (VMED)			103	343	446
TOTAL VETERINARY MEDICINE			126	389	515

INTERDEPARTMENTAL PROGRAMS AND TRANSIENT PROGRAMS - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Cellular & Molecular Biology (CMBL)			4	2	6
Integrated Textile & Apparel Science (ITAS)				7	7
Real Estate Development (RDEV)			30	1	31
Rural Sociology (RSOC)			3	5	8

Interdepartmental Sociology (SOCY)			2	6	8
Transient (TRNS)	12	5			17
Exchange Student (EXCH)	15	6		2	23
Undeclared Graduate School (UNGS)			13	3	16
Interdisciplinary Univ Studies (IDSC)	18	17			35
Undeclared Interdepartmental (UNIN)	21	17			38
TOTAL INTERDEPARTMENTAL	66	45	52	26	189

ALL UNIVERSITY - Fall 2012

Title	Undergrad Male	Undergrad Female	Graduate Male	Graduate Female	Total
Grand Total	10,259	9,916	2,446	2,513	25,134

Enrollment by Alabama County — Fall 2012

County	Male	Female	Total
Autauga	127	99	226
Baldwin	325	304	629
Barbour	45	39	84
Bibb	6	5	11
Blount	39	30	69
Bullock	6	12	18
Butler	19	27	46
Calhoun	110	94	204
Chambers	77	76	153
Cherokee	26	19	45
Chilton	34	27	61
Choctaw	6	9	15
Clarke	20	33	53
Clay	29	19	48
Cleburne	22	17	39
Coffee	77	83	160
Colbert	54	32	86
Conecuh	9	12	21
Coosa	13	14	27
Covington	40	39	79
Crenshaw	14	15	29
Cullman	90	72	162
Dale	55	45	100
Dallas	34	29	63
DeKalb	64	48	112
Elmore	131	148	279
Escambia	47	30	77

Etowah	94	76	170
Fayette	8	8	16
Franklin	13	9	22
Geneva	30	23	53
Greene	3	2	5
Hale	8	8	16
Henry	19	35	54
Houston	219	183	402
Jackson	46	46	92
Jefferson	1082	1060	2,142
Lamar	4	5	9
Lauderdale	80	84	164
Lawrence	24	16	40
Lee	954	876	1830
Limestone	116	103	219
Lowndes	17	12	29
Macon	27	26	53
Madison	913	835	1,748
Marengo	20	12	32
Marion	7	14	21
Marshall	143	97	240
Mobile	356	342	698
Monroe	30	37	67
Montgomery	437	471	908
Morgan	159	152	311
Perry	7	5	12
Pickens	7	8	15
Pike	25	37	62
Randolph	33	51	84
Russell	57	62	119
Saint Clair	64	52	116
Shelby	606	574	1,180
Sumter	4	2	6
Talladega	100	88	188
Tallapoosa	100	98	198
Tuscaloosa	49	74	123
Walker	25	23	48
Washington	7	10	17
Wilcox	16	8	24
Winston	5	6	11
Total	7,501	7,173	14,674

Enrollment by State — Fall 2012

County	Male	Female	Total
Alabama	7435	7007	14,442
Alaska	4	10	14
Arizona	15	19	34
Arkansas	18	22	40

California	92	126	218
Colorado	28	42	70
Connecticut	22	33	55
Delaware	7	8	15
District of Columbia	4	1	5
Florida	636	783	1,419
Georgia	1,591	1,522	3,113
Hawaii	4	6	10
Idaho	5	3	8
Illinois	95	107	202
Indiana	35	40	75
Iowa	11	12	23
Kansas	13	16	29
Kentucky	113	163	276
Louisiana	72	75	147
Maine	2	4	6
Maryland	68	98	166
Massachusetts	27	31	58
Michigan	36	27	63
Minnesota	14	18	32
Mississippi	75	89	164
Missouri	39	56	95
Montana	2		2
Nebraska	5	8	13
Nevada	7	10	17
New Hampshire	10	8	18
New Jersey	66	65	131
New Mexico	11	3	14
New York	58	46	104
North Carolina	165	174	339
North Dakota	2	2	4
Ohio	64	95	159
Oklahoma	9	16	25
Oregon	7	5	12
Pennsylvania	53	73	126
Rhode Island	7	6	13
South Carolina	96	140	236
South Dakota	4	1	5
Tennessee	410	449	859
Texas	303	351	654
Utah	9	3	12
Vermont	6	3	9
Virginia	178	179	357
Washington	20	17	37
West Virginia	11	13	24
Wisconsin	21	17	38
Wyoming	1	4	5
TOTAL (All States)	12,013	12,032	24,045

U.S. Territories and Possessions - Fall 2012

County	Male	Female	Total
Puerto Rico		3	3
Virgin Islands	2		2
Unknown	16	12	28
US Citizens Living Abroad	9	11	20
TOTAL	12,040	12,058	24,093

Enrollment by Foreign Country - Fall 2012

County	Male	Female	Total
Albania	1		1
Argentina	1	2	3
Australia	3	1	4
Azerbaijan	1		1
Bahamas		5	5
Bangladesh	20	8	28
Bosnia-Herzegovina	1		1
Brazil	19	5	27
Bulgaria	1	1	1
Burkina Faso		1	1
Cambodia	1		1
Cameroon	3	5	8
Canada	7	7	14
China	270	203	473
Colombia	2	1	3
Congo (Republic of Congo)			
Costa Rica	2		2
Cote d'Ivoire (Ivory Coast)	2	1	3
Croatia		1	1
Czech Republic	1	1	2
D/R of the Congo (Frm: Zaire)		1	1
Ecuador	4		4
Egypt	8	1	9
El Salvador	1		1
Eritrea		1	1
Ethiopia	5		5
France	4	2	6
Germany	6	3	9
Ghana	6	1	7
Great Britain/N Ireland	4	3	7
Greece	2		2
Guatemala		1	1
Guyana		1	1
Honduras		1	1
Hong Kong	3		3
Hungary			
India	124	39	163

Indonesia		1	1
Iran	20	6	26
Iraq	1	1	2
Israel			
Italy		2	2
Jamaica		3	3
Japan	2	2	4
Jordan	2	1	3
Kenya	4	1	5
Kuwait	2	1	3
Lebanon			
Libya	1		1
Macau	1		1
Macedonia			
Malaysia	1	1	2
Mauritius	1	1	2
Mexico	3	2	5
Morocco	1	2	3
Nepal	14	2	16
Netherlands	2	1	3
New Zealand	1	1	2
Nicaragua		1	1
Niger	1		1
Nigeria	15	2	17
Norway			
Pakistan	1		1
Panama	1	1	2
Paraguay		1	1
Peru	2	2	4
Philippines			
Poland		1	1
Republic of the Congo	2		2
Romania	2	1	3
Russia	2	1	3
Saudi Arabia	17	1	18
Senegal			
Serbia			
Singapore	1	1	2
Slovakia		1	1
South Africa			
South Korea (Republic of Korea)	29	19	48
Spain	2	3	5
Sri Lanka	5	3	8
Sudan	1		1
Swaziland		1	1
Sweden	1		1
Syria			
Taiwan	13	6	19

Thailand	3	5	8
Trinidad and Tobago	1	3	4
Turkey	29	7	36
Uganda	1		1
United Kingdom			
Uganda	1		1
Uruguay	1	1	2
Venezuela		2	2
Vietnam	3	1	4
Zambia	1	1	2
Zimbabwe	1	2	3
Unknown	1	6	7
TOTAL	692	397	1,089

Financial Information

Auburn University's fees have remained somewhat lower than those charged by similar institutions in the Southeast and in other sections of the country. As institutional costs have risen, the Board of Trustees has authorized small increases in fees from time to time. Every effort is made, however, to hold fees and charges at a minimum.

The following fees and charges are in effect at this time. However, since the catalog must be published well in advance of the next school year, it is not always possible to anticipate changes. Thus the fee schedule may have to be revised. Every effort will be made to publicize changes as far in advance as possible.

- Basic Charges (p. 50)
- Other Fees and Charges (p. 52)
- Alabama and Non-Alabama Study Policy (p. 48)
- Academic Common Market (p. 47)
- Financial Aid (p. 51)
- Scholarships (p. 54)

Academic Common Market

The Academic Common Market is an agreement among 14 Southern Regional Education Board states (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia). According to the agreement, if one of these states does not offer a particular degree program in its state-supported universities, a resident of that state may enroll in that degree program at a university in one of the other states without having to pay out-of-state tuition. Each state specifies which programs offered at out of-state universities it will allow its residents to attend as common market students. The states of Florida, North Carolina and Texas do not participate in the Academic Common Market.

To be eligible for consideration for the Common Market at Auburn, students must be enrolled in degree programs agreed to by their home states, be classified as a junior or senior at Auburn, have a 3.0 GPA for all college-level course work attempted, including transfer work, and be certified as a resident of one of the other states. Auburn students who enter as common market students and do not complete 12 hours per term, do not maintain a 3.0 or who later change to a degree program not certified as eligible by their home states, lose the waiver of out-of-state tuition.

Since out-of-state residence is a requirement for being a common market student, students may not use the time spent as common market students to qualify them as residents of Alabama.

See the Common Market website, http://www.auburn.edu/academic/provost/undergrad_studies/corefaq.html, for more information. Application materials are due by March 15 for the following year. If space remains, applications for spring semester received by October 15 will be considered.

Alabama and Non-Alabama Student Policy

Students enrolled prior to June 1, 1996 should consult with the Office of the Registrar for changes in residency status.

Policy for Students Enrolled for the First Time June 1, 1996, and Thereafter

For the purpose of assessing fees, applicants shall be classified as Alabama or non-Alabama students. Non-Alabama students are required to pay a non-resident tuition fee.

An Alabama student is a person which shall be a citizen of the United States, or a resident alien, and who shall have resided and had habitation, home and permanent abode in the State of Alabama for at least 12 months immediately preceding current registration. In applying this regulation, "applicant" shall mean a person applying for admission to the institution, if applicant is married or 19 years of age, and financially independent. Otherwise, it shall mean parents, parent or legal guardian of his/her person. If the parents are divorced, residence will be determined by the residency of the parent to whom the court has granted custody.

A person who establishes a guardianship for purpose of avoiding non-Alabama fees will be subject to non-resident tuition.

No person who moves to Alabama for the primary purpose of attending college shall be considered to have demonstrated intent to establish domicile in the State of Alabama, and will generally not be considered eligible for classification as a resident student. Clear and convincing evidence to the contrary must be presented to overcome this presumption.

In determining Alabama student status for purposes of assessing fees, the burden of proof is on the applicant.

Additional Persons Eligible for Resident Tuition

1. Military personnel on active duty stationed in Alabama, their spouses and dependent children (as defined by Internal Revenue Codes), as well as military personnel whose State of Residence on their Leave and Earnings Statement (LES) is Alabama, who have continuously filed Alabama income tax returns for the duration of their service, and their spouses and dependent children.
2. Non-resident graduate students appointed on qualifying assistantships of at least 1/4-time. The student will be classified as a non-resident for tuition purposes, and the out-of-state portion of tuition is waived, leaving the student obligated for the equivalent of resident tuition.
3. Full-time employees of a state of Alabama agency or institution, their spouses and dependent children.
4. Spouse and dependent children of a non-resident, provided the nonresident has been employed in Alabama full-time for at least 12 consecutive months prior to registration, has filed an Alabama Income Tax Return for the tax year prior to the year in which the student is admitted, and did not claim a credit on the Alabama return for income taxes paid to another state.
5. Non-resident students with junior or senior standing selected for programs included in the Southern Regional Education Board Academic Common Market, provided the student does not change to another program not included, is enrolled in 12 hours per term and earns a 3.0 each term. In such cases of change, reduction in course load or failure to meet the GPA, the student will be classified as a non-resident for tuition purposes and the out-of-state portion of tuition that had been waived previously, will no longer be waived. See section on Academic Common Market for application process.
6. Persons whose spouses by legal marriage are bona fide Alabama residents.
7. Spouses and dependent children of persons who establish domicile within the State of Alabama, provided that the person who establishes domicile is employed full-time in a permanent position in Alabama.
8. Students enrolled in the College of Veterinary Medicine professional DVM program admitted under contract with the Southern Regional Education Board.

Initial Determination of Eligibility

To be initially classified as eligible for resident tuition, students must demonstrate that they or their parent, guardian or spouse qualify for one of the eligibility categories prior to the first day of class. A signed statement is required that qualification for the eligibility category claimed has been met prior to registration.

Transfer Students

In the case of new transfer students, classification as a resident by the previous institution does not guarantee that status at Auburn University. Enrollment by a non-resident student at a college or university within the state of Alabama for more than 9 hours in any term during the period when the student is attempting to establish residency will normally exclude that student from consideration. That student will be considered to be in the state for the purpose of education.

Change in Eligibility for Resident Tuition

Students determined to be eligible for resident tuition will maintain that eligibility upon re-enrollment within 12 months of their most recent enrollment, unless there is evidence that the student subsequently has abandoned resident status (e.g., registering to vote in another state.) Students failing to re-enroll within 12 months must establish eligibility upon re-enrollment.

Students initially classified as ineligible for resident tuition will retain that classification for tuition purposes until they provide clear and convincing evidence that they have established permanent domicile in Alabama. The burden of proof of change in eligibility rests on those requesting change. Evidence relevant to an initial determination of eligibility is also relevant to establishing a change in eligibility.

Non-resident students who carry an academic load considered normal (10 or more hours per term, undergraduate, or 7 hours or more hours per term, graduate) for students at Auburn University will be presumed to be in the State of Alabama primarily for the purpose of gaining an education and, thus, have not demonstrated the intent to establish a true domicile in Alabama. Clear and convincing proof may overcome this presumption, but again, the burden of proof rests on those requesting change in eligibility. Any change in resident tuition eligibility occurring during an academic term will not become effective until the registration for the succeeding term.

The following types of evidence may contain data to support the establishment of twelve 12-month residency in the State of Alabama. In all cases, the person must be at least 19 years of age or married, and financially independent. Otherwise, the person's residency will be based on that of the parent or guardian.

1. Ownership of rental or residential property in the State of Alabama and continuous occupation thereof on an extended term of not less than twelve consecutive months.
2. Full-time permanent employment in the State of Alabama.
3. Possession of State of Alabama License(s) required to do business or practice a profession in Alabama.
4. Legal marriage to a bona fide Alabama resident.
5. Registration to vote in the State of Alabama.
6. Filing of Alabama resident income tax returns.
7. Holding a current Alabama drivers license.
8. Registration of vehicle in Alabama, and payment of property taxes, thereon.
9. Evidence of local banking activity within the State of Alabama for 12 consecutive months prior to making application for residency change.

The Office of the Registrar at Auburn University and the Office of the Registrar at AUM shall have the responsibility for determining whether a student shall be classified as an Alabama or non-Alabama student. The decision of the Office of the Registrar shall be subject to review by the Residency Committee (at Auburn) or the Chancellor (at AUM) or the designated representative of each, upon written request of the applicant.

Procedures for Appeal of Residency Decision

The following outlines the process by which students may appeal the initial decision of residency for tuition purposes by the Office of the Registrar.

1. Students must submit a letter to the Office of the Registrar, addressed to the Residency Committee, requesting residency reclassification and outlining the circumstances that have changed since the initial residency decision.
2. Along with the letter, students should submit whatever evidence they feel is relevant to their appeal. Examples of the types of evidence that may contain information relevant to reclassification can be found in the Auburn University Residency Guidelines in the this *Bulletin*.
3. The letter of request for appeal and the supporting evidence must be received no later than two business days before the committee meets. The Office of the Registrar will prepare all materials for presentation to the committee regarding each individual appeal.
4. The committee will vote on the merits of each appeal and as it relates to the written guidelines as adopted by the state of Alabama and the Auburn University Board of Trustees.
5. The Residency Appeals Committee Chair will send a letter to students informing them of the final decision and reason.
6. All proceedings and votes will be recorded and filed in the Office of the Registrar.
7. The students may submit further appeals to the senior associate provost if desired.

Basic Charges

The following is a schedule of the tuition structure effective Fall, 2013. If you need more details, please call the Student Financial Services Office at (334) 844-4634.

Tuition and Registration

Basic Charges	Resident	Non-Resident
Credit Hour Tuition - Undergraduate to 12 hours* (1)	344.00	1,032.00
Credit Hour Tuition - Graduate/Professional to 9 hours* (1)	459.00	1,377.00
Registration Fee (1)	598.00	598.00
Proration Fee	200.00	200.00

* Additional credit hour tuition eliminated

Non-Credit/Specialty Fees

Basic Charges	Resident	Non-Resident
Auburn Abroad Fee* (2)	598.00	598.00
Auditing Fee - Undergraduate per course (3)	344.00	1,032.00
Auditing Fee - Graduate/Professional per course (3)	459.00	1,377.00
Clearing for Graduation (4)	450.00	450.00
College of Veterinary Medicine Clinical Rotation Fee*	598.00	598.00
GRA/GTA Enrollment Fee	349.00	349.00
Horticulture	349.00	349.00
International Student Fee	130.00	130.00
Music Fee (full hour lessons) (5)	246.00	246.00
Music Fee (half-hour lessons) (5)	163.00	163.00

* Same as Registration fee

Professional Fees, Program Fees, Differential Tuition*

Basic Charges	Resident	Non-Resident
College of Architecture, Design, & Construction (per semester)	2,160.00	2,160.00
College of Business FR/SO (per semester)	260.00	260.00
College of Business FR/SO Summer (per semester)	75.00	75.00
College of Business JR/SR (per semester)	560.00	560.00
College of Business JR/SR Summer (per semester)	150.00	150.00
College of Business Graduate - per credit hour	200.00	200.00
College of Veterinary Medicine (per semester)	4,000.00	8,000.00
Honors College 1st year (per semester)	250.00	250.00
Honors College 2nd year (per semester)	225.00	225.00
Honors College 3rd year and beyond (per semester)	200.00	200.00

School of Nursing - per credit hour	200.00	200.00
School of Pharmacy (per semester)	5,283.00	5,283.00

* Professional fees, program fees, differential tuition are in addition to regular credit hour tuition

Graduate students' tuition and registration fee are waived, provided they are on a one-quarter time or greater appointment and are being paid according to the approved salary structure as a Graduate Research or Teaching Assistant. Their appointment date must be effective as of the eighth class day of the spring semester, the fifth class day of summer semester, or September 1 for the fall semester. For graduate students being appointed for the first time Fall 2013, the student must have a one-third time or greater appointment.

Professional and Program fees are not waived.

Graduate students that have their tuition and registration fee waived pay the GRA/GTA enrollment fee each semester.

1. The university tuition and registration fee is used to meet part of the cost of instruction, physical training and development, laboratory materials and supplies for student use, maintenance, operation and expansion of the physical plant, Library and Student Activities. The Student Activities portion of the fee supports such activities as intercollegiate athletics, exhibits, GLOMERATA, intramural sports, PLAINSMAN, religious life, social affairs, student government, student union activities and operations, TIGER CUB, and WEGL Radio Station. This fee includes \$0.25 held in reserve to cover damage to university property by students. The Registration Fee is waived for full-time faculty and staff. All students except faculty and staff are eligible to participate in Student Activities.
2. Students participating in the Study Abroad/Exchange Program will pay the Auburn Abroad Fee, and any course work resulting in AU credit or grades will be assessed in accordance with the university fee structure.
3. Not charged to faculty and staff.
4. A student who is a candidate for a degree in a term in which no credit work is taken is required to register in such term as a pre-requisite to graduation. (For members of the faculty and staff the charge shall be reduced to \$5.00.) Graduation fee is to be paid in addition to this charge.
5. This additional music fee is to be paid for each Performance Course of individual instruction. Instruction is available in either half-hour or hour lessons.

Financial Aid

The Office of Student Financial Services at Auburn University provides financial assistance to students who need aid to attend the university. Students seeking assistance are required to complete the Free Application for Federal Student Aid (FAFSA) annually. The FAFSA is available for the new aid year beginning each January. Students should apply as early as possible in order to maximize eligibility because many funds are limited. Counselors are available each weekday from 7:45-4:45 in 203 Martin Hall. Application links and instructions are available on the Web at www.auburn.edu/finaid.

Federal aid includes grants, loans and part-time employment.

Grants

Federal Pell Grants are available to eligible undergraduate students who demonstrate exceptional need. Federal Supplemental Educational Opportunity Grants are available, in limited number, to eligible undergraduates with the greatest financial need.

Loans

Federal Subsidized and Unsubsidized Loans and Federal Perkins Loans provide long-term, low interest loans to students. The Health Professions Loan Program makes available, in limited number, long-term loans for students in Pharmacy and Veterinary Medicine. Federal PLUS loans are also available for eligible parent borrowers of dependent students.

Work

The Federal Work-Study Program provides part-time employment, in limited number, for students who demonstrate financial need.

Scholarships

The Scholarship Office is located in the Quad Center and on the Web at www.auburn.edu/scholarship.

Graduate Assistantships

Graduate students may be eligible for teaching and research assistantships and traineeships. Information is available from the department of the student's major field.

Other Fees and Charges

Course Drop Fee

A \$100.00 per class fee is charged for classes students drop between the 6th and 15th class day of the fall and spring semester. For the summer term, the charge is assessed for classes dropped between the 3rd and 5th class day.

Late Payment Charges

All students, regardless of classification, must clear tuition, fees and other university obligations by the deadlines set by the university, or be liable for late payment charges. Late payment charges will be assessed following each due date at 1.5 percent of the unpaid balance.

Returned Check Charge.....25.00

Note: All checks accepted subject to collection.

Application Fee

An application fee must accompany all applications for admission and is not refundable nor applicable to registration fees. (See "Undergraduate Admissions" section under Academic Policies.) An application fee must accompany the application for housing and is not refundable or applicable to housing fees. (See "Housing and Residence Life" section under Student Services.)

Fees Related to Graduation

Graduation Fee (each degree).....25.00

Duplicate Diploma Fee.....20.00

Graduate School Copyright Fee.....55.00

Thesis/Dissertation Fee.....contact Graduate School for amount

Internship Courses

Students registering for an internship course from one to nine hours will be assessed at the per credit hour rate and pay tuition and the proration fee only. No registration fee will be assessed **provided that the student is not enrolled in any other courses and is taking an internship course only.**

Rent for Student Housing, (see "Housing and Residence Life")

Meal Plans (See "Dining Services" under Student Services.)

Special Service Fees

Cooperative Education Program.....45.00

Cooperative Education ID Fee (athletic tickets).....96.00

Cooperative Education Diploma Fee.....15.00

Resignations and Refunds

Students officially resigning prior to the start of a term will not be held liable for fees (other than non-refundable fees). Students resigning during the first 15 class days of the fall and spring semesters and the first 5 class days of the summer term and/or session will be charged a \$100 Resignation Fee.

The liability for fees will not be excused for resignations effective after the 15th class day of fall and spring semesters and the 5th class day of summer term and/or session except in cases of resignation caused by personal illness (physicians statement required) or call into military service (copy of activation orders required, excluding temporary training assignments). A pro-rata reduction will be made in cases of personal illness and a full reduction for military service activation. Students having made prior payment will be refunded the amount paid less their liability after the resignation. Students suspended for disciplinary reasons are not eligible for refunds or reductions in liability. Resigning students receiving refunds will first have their refunds applied to any outstanding obligations and to any scholarship, grant or loan which they had received for the term.

Students reducing course loads on or prior to the 15th day of classes of fall and spring semesters and the 5th class day of summer term and/or session may be eligible for a partial refund or reduction in liability of tuition and fees. To be eligible, the adjustment must be completed on or before the 15th day of classes of fall and spring semesters and the 5th class day of summer term and/or session. In such cases, fees will be reassessed based on the adjusted schedule.

Students who believe that extenuating circumstances warrant an exception to the refund policy must submit an appeal in writing to the Director, Office of Student Financial Services, Martin Hall. Acceptance or rejection of the appeal will be mailed within 10 business days.

Any Federal Title IV financial aid recipients who resign will be liable for any unearned funds received as determined by the Federal Return of Funds Policy. These amounts will be charged back to the student's university account.

Payment of University Obligations

The Auburn University Billing/Receivable System will bill students the majority of their charges due AU. Among the charges included within this system are those for tuition/fees, dining plan, housing and parking. Other charges will be included in the system as deemed appropriate. Any questions concerning a charge should be directed to the department responsible for that particular charge.

AU Billing/Receivable statements will be processed at approximate monthly intervals corresponding to the university's semester schedule. The first installment for tuition and fees will be billed and due prior to the beginning of each semester. The final installment will be billed approximately one week prior to the beginning of the semester and due on the bill due date. Additional charges will be billed as incurred. All charges appearing on a billing statement must be cleared by the due date for that statement or late payment charges will be assessed. Late payment charges may be waived for tuition resulting from university registration and housing charges when financial aid is processed through the university and evidence of such aid is recorded on the statement.

AU Billing/Receivable statements will be delivered via E-Bill (the university's electronic billing system.) Students are notified through TigerMail when a new billing statement has been processed, and any other Authorized Users added by the students, through Tigeri, are sent e-mails to their specified e-mail addresses.

Students are expected to meet all financial obligations when they fall due. The university reserves the right to deny admission, disenroll, prevent participation in graduation and withhold transcripts, cap, gown and diploma of any student who fails to meet promptly their financial obligations to the university. It is each student's responsibility to be informed of all payment due dates, deadlines, and other requirements by referring to official sources of university information such as this bulletin, office and departmental web sites, official calendar of events, announcements printed in the Plainsman, or that disseminated by other means from time to time. Students owing charges for prior terms will not be allowed to register for future terms until all charges are paid.

University registration or other requests for class assignment create a liability for the payment of tuition and fees resulting from assigned classes. Such liability can only be excused when students withdraw or resign in accordance with university procedures.

Checks

Checks given in payment of any university obligation are accepted subject to final collection. If the bank on which the check is drawn does not honor the demand for payment and returns the check unpaid, the student will pay a returned check fee of \$25 and any applicable late payment charges. If payment is not cleared promptly, the student's registration may be canceled. The university has the right but not the obligation to redeposit any insufficient check without notice to the student or maker.

Collection costs or charges along with all attorney fees necessary for the collection of any debt to the university will be charged to and paid by the debtor.

Veterans

All veterans (Chapters 30 and 32), reservists and guard members (Chapter 106) and veterans' dependents (Chapter 35) are responsible for paying fees and charges on the same basis as other students. Veterans under the Vocational Rehabilitation program (Chapter 31) and students receiving the Alabama GI Bill should make arrangements for their tuition, fees and books to be paid prior to their first payment due date.

Foreign Students Under Contract

A special administration management/program fee will be negotiated for foreign students who come to the university under a contractual arrangement that requires special administrative and programming arrangements beyond those of the regular academic program of the university.

Scholarships

December 1 is the Freshman Scholarship priority deadline. Incoming freshmen who apply for admission with all admission materials postmarked by this date receive automatic consideration for Freshman and General Scholarships. A separate application is not required for consideration.

To receive consideration for need-based General and Departmental Scholarships, students must complete the Free Application for Federal Student Aid (FAFSA) each year, available online beginning January 1. The FAFSA must be received by Auburn by March 1.

Minimum academic requirements for scholarship consideration and award amounts are for students planning to enroll Summer or Fall 2013 and are subject to change for enrollment in future terms.

Freshman Scholarships

National Scholars Presidential Scholarships are awarded to National Merit Finalists and National Achievement Finalists. National Presidential Scholars receive tuition for four years for Alabama residents or \$60,000 over four years at \$15,000 per year for non-residents, a \$1,000 technology stipend the first fall semester, and a \$2,500 enrichment experience stipend available for one semester after the second year. National Presidential Scholars also receive an on-campus housing stipend for four years and an annual stipend based on eligibility as determined by the National Merit Scholarship Corporation and financial need as demonstrated through completion of the FAFSA. National Merit and Achievement Finalists must have a minimum 3.5 high school GPA. National Merit Finalists should contact National Merit Scholarship Corporation to name Auburn University as their first choice institution by May 1. National Achievement Finalists should mail or fax a copy of their notification letter to the Office of University Scholarships by May 1.

Spirit of Auburn Scholarships are automatically awarded to Alabama residents with a minimum 28 ACT or 1250 SAT score and a 3.5 high school GPA at three levels beginning in October. Students must have the minimum test score and high school GPA required for consideration at each level. Presidential Scholars receive tuition for four years and a \$1,000 technology stipend the first fall semester. Founders Scholars receive tuition for four years. University Scholars receive \$10,000 over four years at \$2,500 per year.

Academic Scholarships are awarded among non-residents with a minimum 29 ACT or 1290 SAT score and a 3.5 high school GPA at three levels in December. Students must have the minimum test score and high school GPA required for consideration at each level. Academic Scholarships are awarded competitively, and the minimum test score and GPA required for consideration at any level does not guarantee a scholarship will be awarded at that level. Presidential Scholars receive \$60,000 over four years at \$15,000 per year and a \$1,000 technology stipend the first fall semester. Heritage Scholars receive \$40,000 over four years at \$10,000 per year. Charter Scholars receive \$20,000 over four years at \$5,000 per year.

Achievement Scholarships are awarded among Alabama residents with a minimum 26 ACT or 1170 SAT score, a 3.5 high school GPA, who have not been previously recognized with a Freshman Scholarship of equal or greater value. Achievement Scholarships are awarded competitively in January at \$6,000 over four years (\$1,500 per year).

Auburn Spirit Foundation and Auburn Spirit Foundation Legacy Scholarships are awarded among students with a minimum 26 ACT or 1170 SAT score and a 3.5 high school GPA, who have not been previously recognized with a Freshman Scholarship of equal or greater value. Auburn Spirit Foundation and Auburn Spirit Foundation Legacy Scholarships are awarded competitively in January at \$6,000 over four years (\$1,500 per year).

General Scholarships

General Scholarships are awarded competitively among incoming freshmen, transfers, and current Auburn students. Criteria for General Scholarships vary and may include but not be limited to geographic location, academic achievement, and financial need. Eligible students are automatically considered for all General Scholarships for which they meet the criteria. For a complete list of General Scholarships, please visit <http://www.auburn.edu/scholarship/undergraduate/general.html>.

Departmental Scholarships

Departmental Scholarships are awarded by each of Auburn's 12 colleges and schools, separate from the scholarships awarded at the University level. Criteria for Departmental Scholarships vary and may include but not be limited to academic major, geographic location, academic achievement, and/or financial need. A separate application may be required for consideration. Students should contact the college or school in which they plan to major for Departmental Scholarship opportunities and requirements. Please visit <http://www.auburn.edu/scholarship/undergraduate/departmental.html> and select the appropriate college or school via the links on the right side of the page, for more information regarding available Departmental Scholarships.

Information Technology

The Office of Information Technology (OIT) located at 300 Lem Morrison Dr., offers computing and communication services to the university community. OIT provides Auburn University with a reliable, secure information technology infrastructure and technical support that enables and encourages the effective use of information technology. Contact OIT via the OIT HelpDesk at (334) 844-4944, via email to helpdesk@auburn.edu, online at www.auburn.edu/oit and follow us on Twitter (AuburnOIT) and Facebook (Auburn University OIT).

Internet Connectivity

AU Net, Auburn University's campus network, is the Ethernet backbone linking computers and networks in all buildings to each other, and Auburn University to the Internet. The campus is connected to the Alabama Research and Education Network (AREN) and to the Internet through high-speed fiber optic connections. Auburn University is a participant in the Internet2 initiative. A secure wireless network is available to AU students, faculty, and staff in most public spaces and classrooms on campus and in the campus residence halls as well. Auburn University also offers access for campus visitors through a subscription-based WiFi wireless network provided by Verizon called AU-Guest. This service can be purchased by anyone on the Auburn University campus.

Servers

Solaris, P-Series AIX, Red Hat Linux, and Windows servers provide campus-wide network services including email, web resources, user authentication, web and application hosting, and workgroup computing for departmental users. A Helix server is available for distribution of streamed audio and video and live broadcasts as well.

Computing Access

Each currently enrolled student has a username and password which provide access to AU Access (campus portal), TigerMail Live (AU email), network storage, OIT computing labs, network printing, restricted online class materials, and other AU computing resources. Students have Web access to the online student information system, Tiger i, where they can register for courses, view grades, and access additional student services. E-Bill provides online payment of University fees as well as account summaries. Students log in to AU Access for registration, billing, and academic records. Many online resources are also accessible through smart phones and tablets via the official Auburn University mobile web app (<http://auburn.edu/app>).

Computers for Students. Computing labs across campus are available for use by students and employees. OIT maintains 16 computing labs with more than 300 networked multimedia Windows machines, most of which are available 24 hours a day. An AU username and password are required to use the OIT labs. OIT computing labs have general purpose software for database, spreadsheet, word processing, Internet (Web browsing), email, and some course-specific software. Network laser printing is available in all OIT Labs, and color printing is available outside the HelpDesk on the third-floor of the library lab for a nominal fee.

Identity Management

Identity Management issues ID cards for all Auburn University affiliates and employees, facilitates VPN access, assists in resolving username and password issues, and manages faculty access to appropriate resources. To request access or an ID for an affiliate, please use the Access Request Form located at www.auburn.edu/oit/idm/. For more information contact IDM at idm@auburn.edu or call (334) 844-4386.

World Wide Web

Auburn University is committed to providing convenient and secure Web applications to our University community. Student admissions, registration and records, campus directory services, administrative systems, email, and instructional and research tools are available to the Auburn University students, faculty and staff via the World Wide Web. The official AU website resides at www.auburn.edu.

AU colleges, schools, and departments maintain websites specific to their areas. The AU website includes online directory services, news, calendars, campus map, and a search engine. AU Access, the campus portal, SharePoint and restricted webspace are provided for sensitive information (such as copyrighted material). The Office of Information Technology website is located at www.auburn.edu/oit. It serves as a central dissemination point for information about and assistance with computing, information technology, multimedia, and telecommunications at Auburn University. AU OIT also has a presence on Twitter (AuburnOIT) and Facebook (Auburn University OIT).

Instructional Technology

Auburn University is dedicated to providing all faculty and students with effective technology to enhance teaching and improve learning. Canvas provide ways for faculty to manage course activities and content and for students to interface with the material, the teachers, and each other. Streaming media and web-based technologies are available for hybrid and distance education programs and to enhance the online learning experience for all students. Several technology-enhanced classrooms are available on-campus, as are

several special course-specific computer classrooms and general computer labs. The Instructional Media Group (IMG) of OIT consults with and conducts workshops for faculty members in a range of instructional technologies. For information on instructional technologies, contact the Instructional Multimedia Group at img@auburn.edu or (334) 844-5181.

Telecommunications

OIT provides telephone, data network (wired and wireless), and Cable TV services for all campus buildings including dormitories. Additional information on Telecommunications services available to AU students including cellular service discounts is provided at www.auburn.edu/oit/students.

Infrastructure Planning

OIT participates on all building committees for new buildings and major renovation projects. Through this process, OIT ensures that telecommunications, audio/visual, and networking needs are addressed and that these systems are properly designed. OIT meets regularly with the Facilities Division to coordinate necessary infrastructure improvements. In support of Auburn University's mission, OIT is continually planning and upgrading its backbone copper, fiberoptic cabling infrastructure, and core network equipment to meet Auburn University's growing data and telecommunications needs.

Hardware

OIT manages AU Lease (aulease@auburn.edu), a PC leasing program for campus departments and the Student PC Shop for computer setup and repair. Additional information on this program is available at: <http://www.auburn.edu/oit/spcs>). Additional information on AU Lease services is available at www.auburn.edu/aulease.

Support

Training, documentation, and consulting are provided for Auburn University students, faculty and staff via orientations, seminars, workshops, publications, and the OIT HelpDesk. The HelpDesk is available on University business days and Sundays to answer questions and offer assistance on IT-related issues. Contact the HelpDesk at (334) 844-4944, via email to helpdesk@auburn.edu, or drop by the third floor, RDB Library. Hours of operation can be found at www.auburn.edu/helpdesk.

Online technology support is always available at www.auburn.edu/oit. The *Survival Guide* site at www.auburn.edu/oit/sg is designed to help new students and their parents become familiar with computing services and resources available at Auburn University.

The Office of Information Technology does not conduct an academic program. Inquiries concerning computer curricula should be directed to the Samuel Ginn College of Engineering or the College of Business.

Policies

Auburn University's Information Technology policies are on the Web at www.auburn.edu/oit/policies. Email (username@auburn.edu) is an official means of communication at Auburn University. As such, students are responsible for checking their Auburn University issued email account in a timely fashion and on a regular basis.

Policy Notes

The statements set forth in this *Bulletin* are for informational purposes only and should not be construed as the basis of a contract between a student and Auburn University.

While the provisions of the *Bulletin* will ordinarily be applied as stated, Auburn University reserves the right to change any provision listed in this *Bulletin*, including but not limited to academic requirements for graduation, without actual notice to individual students. Every effort will be made to keep students advised of any such changes. Information on changes will be available in the Registrar's Office and/or the dean's office. It is important that each student be aware of his or her individual responsibility to keep apprised of current graduation requirements for the student's respective degree program.

Civil Rights Compliance

Auburn University is an equal opportunity educational institution and operates without regard to race, sex, color, age, religion, national origin, disability or veteran status. The university complies with the regulations of Titles VI and VII of the Civil Rights Act of 1964, the Age Discrimination Act, the Age Discrimination in Employment Act, Title IX of the Education Amendments of 1972, Sections 503/504 of the Rehabilitation Act of 1973, the Vietnam Era Veterans Readjustment Assistance Act, the Americans with Disabilities Act of 1990, The Equal Pay Act and the Pregnancy Discrimination Act. As a matter of policy, Auburn University prohibits sexual orientation discrimination in matters regarding academic acceptance, academic performance, or dismissal, as well as employment decisions.

regarding hiring, promotion, and termination. Anyone wishing to file a complaint covered by the above should go to the Affirmative Action Office in 317 James E. Foy Hall, or call (334) 844-4794 between 7:45 a.m. and 4:45 p.m., Monday through Friday.

Equal Employment Opportunities

It is the policy of Auburn University to provide equal employment opportunities for all individuals without regard to race, sex, age, religion, color, national origin, disability or veteran status. Sexual orientation discrimination in employment decisions regarding hiring, promotion, and termination is also prohibited. Anyone wishing to file a complaint covered by the above should go to the Affirmative Action/EEO Office in 317 James E. Foy Hall, or call (334) 844-4794 between 7:45 a.m. and 4:45 p.m., Monday through Friday.

Prohibited Harassment

Harassment based on protected class constitutes a violation of university policy and may also constitute a violation of civil rights laws. Such harassment will not be tolerated by Auburn University. It subverts the mission of the university and threatens the careers, educational experience and well-being of students, faculty and staff. Prohibited harassment includes harassment based on race, sex, age, religion, color, national origin, disability, sexual orientation, and veteran status.

Sexual harassment is a form of sex discrimination and is prohibited by federal regulation. Sexual harassment in academic settings and in the employment area where students are involved is defined as unwelcome sexual advances, requests for sexual favors, and other verbal, graphic or physical conduct of a sexual nature when (1) submission to such conduct may be explicitly or implicitly a term or condition of a student's academic success or employment, (2) submission to or rejection of such conduct may be used as the basis for employment or academic decisions affecting the student and the student's total educational and/or work experience, or (3) such conduct has the purpose or effect of substantially interfering with a student's employment or academic performance or creates an intimidating, hostile or offensive work or educational environment that is severe, pervasive, and objectively offensive. Students who wish to make a complaint of sexual or other prohibited harassment or discriminatory conduct should contact the Office of Affirmative Action/Equal Opportunity in 317 James E. Foy Hall, or call (334) 844-4794 between 7:45 a.m. and 4:45 p.m., Monday through Friday.

Smoking

Smoking of tobacco in AU facilities and vehicles is prohibited except where signs are posted indicating otherwise.

Weapons

Auburn University prohibits possession, use and transportation on university properties of any dangerous or potentially dangerous weapons, including fixed-blade knives, shotguns, rifles, handguns, bows and arrows, crossbows, brass knuckles, air guns, swords and fireworks or explosive devices.

Student Services

- Auburn University Bookstore (p. 57)
- Auburn University Dining (p. 58)
- Division of Student Affairs (p. 59)
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Auburn University Bookstore

The Auburn University Bookstore, located in Haley Center, is a full-service college store dedicated to serving the Auburn campus community. The mission of the store is to enhance the academic experience of the Auburn University student, promote the Auburn Spirit and provide a memorable shopping experience for each and every person who enters the store. The AU Bookstore offers:

- Textbook price comparison feature, online textbook, reservation and shopping at [aubookstore.com](http://www.aubookstore.com) (<http://www.aubookstore.com>);

- Option to rent or purchase new or used books, e-books in-store and online;
- Technology service and educational pricing on technology products;
- Apple Authorized Service Provider;
- Auburn gifts, apparel, novelties and Alumni merchandise, including diploma frames;
- Graduation Regalia;
- Complimentary Residence Hall delivery programs
- Special order services for general books as well as school and office supplies;
- UPS shipping service, copy service, fax service, postage stamps and bookstore gift cards.

All revenue from the AU Bookstore is returned to Auburn University, making it a great way for students, faculty, staff and alumni to show their support for Auburn University.

Auburn University Dining Services

Tiger Dining is proud to partner with Auburn University to deliver the best dining services to students, faculty, staff and visitors of the Auburn University campus. Tiger Dining offers a wide selection of affordable, healthy, well-balanced meal options on campus.

The Auburn University Student Center finds faculty, staff and students enjoying a variety of dining options. *Joann's* offers a taste of home with its traditional style meals. *Au Bon Pain* offers everything from coffee, bagels and pastries to customizable salads, sandwiches, wraps and fresh fruit. A full-service *Starbucks* meets the needs of Auburn University's coffee lovers. To satisfy an Italian appetite, *Papa Johns* has fresh personal pizza's, hot bread-sticks and more. *Chick-fil-A* is right around the corner with its famous chicken sandwiches and waffle fries. Need an extra toothbrush or some chips for a party? *Outtakes' C-Store* has those and more. *Outtakes' C-Store* also offers on-the-go options from wraps and salads to fresh coffee and pastries and especially Olo Sushi. *Chick-N-Grill* brings a fresh appeal with it's rice bowls and burritos made with specialty sauces and organic ingredients.

Terrell Food Court, located on the "Hill" area of campus, provides a choice of toasted flat-bread sandwiches or wraps made to order from Rye of the Tiger, personal pizzas, stromboli and pasta bowls – choose your own mix-ins at *Twisty Mac*, a wide variety of sweets and treats at *Tiger Treats*, Asian cuisine favorites from *Panda Express* and everyone's favorite burgers, hot dogs and wings at *Nathan's Famous*. Due to it's popularity the Tex's Tacos food truck now has a second home at Terrell Food Court with new and expanded menu options. At Terrell, you can even grab on-the-go snack items such as energy drinks, frozen entrees or breakfast favorites from the Terrell C-Store to take back up to your dorm room.

Haley's refreshment Center, on the first floor of the Haley Center, serves signature Outtakes deli sandwiches and salads along with frozen fruit smoothies, breakfast items, Seattle's Best coffee and D² Donuts.

On the second floor main entrance of the library you can find a full service Caribou Coffee House with all of your favorite, coffee, teas, smoothies & more and a variety of late night or early morning Outtakes grab&go snacks and small meals.

Lupton Hall in the lower quad offers an assortment of made-to-order sandwiches and pizza subs at *Lupton Deli*. *Go Greek* is the newest addition to the Lower Quad offering a unique and deliciously healthy Greek Cuisine for breakfast, lunch and dinner including breakfast bagels and quesadilla's, Greek chicken salad, pitas, Greek dinner entrees and more.

Just up the Hill from the Quad is an excellent grab & go venue called *Drawing Board Café*. It is conveniently located near the Dudley Hall library for the many architecture students or anyone passing through headed back to their dorms. At Drawing Board Café you will find a variety of breakfast items, fresh Starbucks coffee, Outtakes sandwiches, salads and wraps; snacks, bottled drinks, soup & more.

West View Dining at The Village, more commonly known among students as Village Dining, provides even more unique concepts and favorites to enhance the already wonderful dining experience at Auburn University; *Cub Stop c-store* has Icees, nachos, bottled drinks & more; a full service *Caribou Coffee* house is there to wake you up in the mornings or afternoons; *Denny's All-Nighter* is an early morning or late night option until 1:00 am with its all day breakfast favorites like the popular Grand Slam, juicy burgers, panini's, burrito's, fruit cups and more; the food court has signature pizzas, made to order pasta, flat-bread sandwiches and wraps, fresh vegetables and dinner entrees, Asian style rice and noodle bowls and made to order Fajitas at *Fiery Fajitas*. *Tiger Zone* provides you with an all you care to eat experience for dinner and is also home to *AU-Some Salads* where guests can choose from more than 36 mix-ins to build their own salad for lunch or dinner and add glazed toppings like chicken or shrimp.

Foy, War Eagle Food Court, has a mix of excellent concepts for an added dining experience. Craft your own salad by the ounce at *Wild Greens*. Capitalizing on the fresh "Health-Mex" trend, *Salsaritas* combines a healthy lifestyle with your favorite Mexican foods.

Enjoy hot breakfast and down-home country fare, including locally produced smoked meats and fresh veggies at *AU Smokehouse*. *Take Five* includes your choice of quality meats and premium toppings on fresh baked bread, pitas or wraps. *Pizza Phlats* has a unique twist of a personal pizza, fresh toppings, made to order and baked on premium flatbread and topped with specialty "drizzles". *Stuff* burgers offers mini burger sliders "stuff" with cheese, crispy chicken fingers and seasoned potato wedges.

Dining's newest addition on campus are the variety of gourmet food trucks available around campus. These food trucks offer students a great way to eat in-between classes and enjoy the outdoors. For more information on the **Tiger Traxx gourmet food trucks** or other dining venues please visit <http://www.auburn.edu/dining>, visit us on Facebook or download the free dining app inside of the Auburn suite of apps. Venues on Auburn's campus are constantly updating, moving and changing to meet student wants and needs in the best possible way. Please be sure to check our website for new venues and additions to the Auburn dining experience.

Tiger Dining also has its own line of catering called **Tiger Catering**, to provide faculty, staff, and students with excellent options to enhance parties, meetings, weddings, special events, tailgating and more. Tiger Catering also accepts dining dollars. For more information about the Tiger Dining experience, please visit <http://www.auburn.edu/dining>, or call 334-844-1234 to reserve your custom Tiger Catering experience.

Auburn University's Required Participation Dining Plan

Research shows that higher education students who spend more time on campus perform better academically, graduate sooner, and enjoy richer academic interactions than those who spend only a small amount of time on campus. Students who eat on campus, enjoying time in community with peers and professors, rather than eating alone or in small groups at home, are far more likely to succeed in the rigorous academic environment of college life. Attendant to those indicators of success, Auburn University implemented a required participation dining plan in the fall of 2008. The program was slowly phased in to cover all Auburn University main campus undergraduates over the past five academic years. All undergraduate students, regardless of when they began taking classes, are now participants in the required participation dining plan.

The required participation dining program enables its participating students to purchase meals, food, beverage products and dining services utilizing their personal student photo-ID card, the TigerCard, at all on-campus dining venues. Students on this declining balance program enjoy a wide variety of dining options, ala carte, in an amount equal to the dollar level of their required contributions. Students residing in on-campus residence halls participate at a minimum level of \$995 per semester. Students residing off-campus participate at a minimum level of \$300. Each participating student's University account will be assessed the appropriate level concurrently with the posting for the upcoming semester's tuition and fees. Each student's plan will activate for student use upon receipt of payment or no later than the day after the due date for tuition and fees. If a student registers late for an academic semester, invoices for the meal plan will be sent to the student in the next month following the student's registration, but the student will still participate in the plan immediately, regardless of when that invoice is sent.

Division of Student Affairs

The mission of the Division of Student Affairs is to cultivate a supportive campus environment that engages students, advances learning, encourages leadership and empowers students to impact the world. The Division encompasses a number of programs and services that support students both inside and outside the classroom. The Division of Student Affairs is comprised of the following departments, programs and services.

Office of Student Conduct

The Office of Student Conduct implements the Code of Student Discipline and is responsible for processing non-academic violations of University policy and provides a fair and educational student conduct process for students and student organizations. The office also educates the Auburn University community about student responsibilities, rights and expectations. Additionally, dean certification requests are processed and completed by the Office of Student Conduct.

The Office of Student Conduct also works with students to aid them in the successful navigation of challenging, personal life issues, critical incidents, hardships and emergencies that may impede their success and retention at Auburn University. The Coordinator of Student Success serves as an aid to students and families during times of student distress, need or emergency, by serving as an advocate, liaison and resource.

Telephone: (334) 844-1305.

Office of Greek Life

The Office of Greek Life provides guidance and support to 53 nationally-affiliated fraternities and sororities. The office guides the overall programming for the Greek community, provides opportunities for interpersonal development, teaches leadership skills and provides educational sessions about risk management issues.

Auburn University's Greek system is comprised of three councils: Interfraternity, Panhellenic and National PanHellenic.

The Interfraternity Council coordinates the relationships among the member fraternities: Alpha Gamma Rho, Alpha Psi, Alpha Tau Omega, Beta Theta Pi, Chi Phi, Delta Chi, Delta Kappa Epsilon, Delta Tau Delta, Delta Sigma Phi, FarmHouse, Kappa Alpha Order, Kappa Sigma, Lambda Chi Alpha, Phi Delta Theta, Phi Gamma Delta, Phi Kappa Psi, Phi Kappa Tau, Pi Kappa Alpha, Pi Kappa Phi, Phi Sigma Kappa, Sigma Alpha Epsilon, Sigma Chi, Sigma Nu, Sigma Phi Epsilon, Sigma Pi, Sigma Tau Gamma, Tau Kappa Epsilon, Theta Chi, and Theta Xi. Alpha Sigma Phi will join the Greek community in 2013.

The Panhellenic Council coordinates activities of its member sororities: Alpha Chi Omega, Alpha Delta Pi, Alpha Gamma Delta, Alpha Omicron Pi, Alpha Xi Delta, Chi Omega, Delta Delta Delta, Delta Gamma, Delta Zeta, Gamma Phi Beta, Kappa Alpha Theta, Kappa Delta, Kappa Kappa Gamma, Phi Mu, Pi Beta Phi, Sigma Kappa and Zeta Tau Alpha.

The National Pan-Hellenic Council coordinates the activities of its member groups: Alpha Phi Alpha Fraternity, Inc., Alpha Kappa Alpha Sorority, Inc., Delta Sigma Theta Sorority, Inc., Kappa Alpha Psi Fraternity, Inc., Omega Psi Phi Fraternity, Inc., Phi Beta Sigma Fraternity, Inc. and Sigma Gamma Rho Sorority, Inc.

Telephone: (334) 844-4600. Website: www.auburn.edu/greeklife.

Office of Student Involvement

The Office of Student Involvement provides a learning laboratory that enhances the academic mission of Auburn University by providing leadership opportunities for students. There are seven Student Activity Portfolios: Center for Community Service, Center for Leadership & Ethics, Center for Student Organizations & Welcome Week, Cultural Programs, Student Government Association, Student Media, and University Program Council. Student Activity Portfolios are funded through student activity fees, and membership is open to any student enrolled at Auburn University.

Telephone: (334) 844-4788. Website: www.auburn.edu/involve.

Center for Community Service

The Center for Community Service is the central resource for volunteer opportunities and community service in the Auburn community. The center offers several programs that help students to achieve their goals of serving their community, including Alternative Student Breaks, Auburn University Dance Marathon, Beat Bama Food Drive and IMPACT.

Telephone: (334) 844-4788. Website: www.auburn.edu/service.

Center for Leadership & Ethics

The Center for Leadership and Ethics offers opportunities for students seeking to become better leaders. Freshman Leadership Programs and the iLead Student Leadership Conference focus on developing leadership in first-year students. The Challenge, Global Leadership Summit and The LeaderShape Institute are programs designed to help participants become future global leaders and open to all students.

Telephone: (334) 844-4788. Website: www.auburn.edu/leadership.

Center for Student Organizations & Welcome Week

The Center for Student Organizations provides opportunities for students to get involved with more than 350 registered student organizations. Student organizations are designed to maximize and enhance the Auburn experience. Students can log on to www.auburn.edu/auinvolve to find a full list of organizations and build a profile to assist in finding organizations and events that meet their interests. The Involvement Ambassadors also serve as a resource for any student or existing and potential student organizations seeking assistance in finding opportunities for involvement.

Welcome Week occurs the first week fall classes begin and provides students with the opportunity to attend more than 90 free events, meet new friends and learn more about many different campus departments.

Telephone: (334) 844-4788. Website: www.auburn.edu/welcomeweek.

Black Student Union

The mission of the Black Student Union is to represent the interests and concerns of all black students at Auburn University, bring together all aspects of black student life for the purpose of improving the campus environment, provide support for the students and the community, promote interaction and good relationships among black students and other Auburn students, by encouraging pluralism on the part of the faculty, administration and the student body at large.

Telephone: (334) 844-1296. Website: www.auburn.edu/bsu.

International Student Organization

The International Student Organization is a student organization created to improve multinational understanding and promote relationships between people of different cultures. The International Student Organization also helps ease the process of adaptation for international students. The organization actively promotes diversity and beneficial interaction between international and domestic students.

Telephone: (334) 844-1296. Website: www.auburn.edu/iso.

Student Government Association

Upon enrollment at Auburn University, each student becomes a member of the Student Government Association, the official organization of the student body. The association is the voice of the students, promoting cooperation and communication with the faculty, administration, the Auburn City Council and the state legislature. The Student Government Association is organized into three branches—executive, legislative, and judicial. The Student Government Association Constitution and Code of Laws, published on the Student Government Association website, detail the guidelines by which the Student Government Association functions.

Telephone: (334) 844-4240. Website: www.auburn.edu/sga.

Student Media

The Auburn Circle is Auburn University's fine art magazine. It serves as a forum for the artists, writers, photographers and designers of the University. Issues are published once every fall and spring and are free to all students.

Telephone: (334) 844-4057. Website: www.auburn.edu/circle.

Eagle Eye News is a student television news organization. The organization produces half-hour television news program that covers campus and area news, sports and information. A live show airs on Auburn Campus Cable Channel 6 and in High Definition all day on Channel 6-1.

Telephone: (334) 844-4057. Website: www.auburn.edu/eagleeye.

The Glomerata is Auburn University's annually-circulated yearbook. The Glomerata is one of the largest circulated student-produced publications in the country and serves to document the academic year in which it is produced. The yearbook includes photographs and stories about student life, athletics, faculty and administration achievements, the community and organizations' activities.

Telephone: (334) 844-4057. Website: www.auburn.edu/glom.

The Auburn Plainsman is the student-run campus newspaper at Auburn University. First published in 1894, the weekly newspaper is an important source of news and information for the entire campus community. In addition, The Auburn Plainsman is the second most decorated college newspaper in the country and provides opportunities for students from all majors to gain practical experience and develop professional skills learned in the classroom.

Telephone: (334) 844-4130. Website: www.theplainsman.com (<http://www.theplainsman.com>).

WEGL 91.1 FM is Auburn University's student-run, non-commercial radio station that provides a wide range of music and information for the Auburn community. WEGL also streams its broadcasts over the internet through its website.

Telephone: (334) 844-4057. Website: www.auburn.edu/wegl.

University Program Council

The University Program Council is Auburn University's programming board. The council consists of 11 committees that are responsible for organizing events such as free movies, comedians, major concerts, workshops, lectures and cultural performances. All events are planned and produced for students by students.

Telephone: (334) 844-4788. Website: www.auburn.edu/upc.

Student Center

The Auburn University Student Center is the family room of the university. Some of the services available in the 184,000 square foot center include James E. Foy Student Information Desk, Tiger Card Center, CopyCat, full service postal kiosk, ATMs, food venues, game lounge, television and study lounges, electronic charging stations, and email kiosks. The Student Center also offers a variety of meeting rooms, ballroom, event space and outside space that serves students, departments and the general public.

Telephone: (334) 844-1300. Website: www.auburn.edu/studentcenter.

Office of Parent and Family Programs

The Office of Parent and Family Programs is the campus link for all Auburn University parents. The office facilitates communication between the University and parents, provides opportunities for parents to be actively involved in the life of the University, sponsors programs for parents to attend and provides services to meet the critical needs of Auburn parents.

Telephone: (334) 844-1304. Website: www.auburn.edu/aupa.

Additional information regarding the Division of Student Affairs may be obtained through the website at www.auburn.edu/studentaffairs.

Housing and Residence Life

Auburn University offers on-campus housing accommodations for undergraduate students in three residential communities consisting of a total of 31 residence halls. The University does not have on-campus housing accommodations for graduate students. All residence halls are air-conditioned and are equipped with wireless Internet service. The halls are convenient to academic buildings, dining venues, recreational areas, laundry facilities, mailrooms, and the library.

The Hill and Quad communities are comprised of residence halls primarily configured in a suite arrangement: two students share a room that is connected by a bathroom to another room shared by two students. There are a limited number of single rooms available. The Village Community residence halls are primarily configured in units: four students each have their own bedroom and share two bathrooms and a common area containing a kitchenette. There are a limited number of three bedroom and two bedroom, one bath units as well. The fourth and newest residential area (opening in August of 2013) is S. Donahue Hall: two single bedroom, two bath units that share common area and kitchenette. There are very limited number of four single bedroom, two bath units. For more details, including rental rates, please visit the Housing website at www.auburn.edu/housing.

Housing for students with disabilities is available in all residential areas. Four residence halls in the Quad and one in the Village house Honors students. Students who are or will be members of the Honors College must specifically request an Honors hall on their housing application if they wish to be considered for assignment to one of these halls. Students can also participate in a Living and Learning Community related to their major or to a particular theme. Information about Living and Learning Communities can be found on the Housing website.

Admission to Auburn University does not automatically include a room reservation, and first-year students are not guaranteed housing. Students may apply for University Housing after they are accepted to the University and have submitted the confirmation deposit. Priority for housing requests is generally based upon the date the application is received. A \$50 non-refundable application fee and a \$250 refundable pre-payment are required with the housing application.

Telephone: (334) 844-4580. Website: www.auburn.edu/housing.

Residential Staff

Each residence hall is staffed by a graduate-level Hall Director, who oversees the daily operations of the residence hall and undergraduate-level Resident Assistants (RAs). These staff members participate in an extensive training program that equips them to provide resources and support to residents. The staff members are responsible for offering social and educational opportunities that will

lead to personal and academic growth and development for residents. Hall Directors and RAs intentionally foster communities that are engaging, supportive and inclusive. They also enforce University Housing regulations and Community Standards.

In addition to the residence hall staff, the Hill, Quad and Village communities are each overseen by a full-time, professional level Area Director. The Area Director is responsible for supervision of the hall staff, the administration of the Residence Life conduct process, training and development of staff, and the overall operation of their area.

Opportunities for Involvement

Residence Life provides numerous opportunities for becoming involved in the residence hall, as well as outside of the hall. Hall Directors and RAs offer activities within the hall designed to foster community among the residents. Educational activities emphasizing academic success and personal growth are also offered throughout the year. Residence Life also offers leadership opportunities through the Residence Hall Association and Freshman Leadership Programs. All on-campus students are automatically members of the Residence Hall Association, which plans on-campus activities for residents. Leadership positions in Residence Hall Association are available each year. Residence Life also co-sponsors a Freshman Leadership Program, which emphasizes leadership development through on-campus living. Residents are encouraged to apply to the Freshman Leadership Program at the start of the Fall semester. In addition to the involvement opportunities offered through Residence Life, staff members are knowledgeable about and can provide connections to other campus organizations and leadership opportunities.

Off-Campus Housing

Auburn University has partnered with Off Campus Partners to provide off-campus housing resources. Students can go to auburn.offcampuspartners.com to browse and view apartments, condos, townhouses and homes that are available to rent in the greater Auburn-Opelika community. Users can also use the off-campus housing site to find a roommate, ride share or buy and sell furniture and textbooks.

Website: auburn.offcampuspartners.com (<http://auburn.offcampuspartners.com>).

Music, Theatre and Lectures

Classical concerts, touring productions by prominent theatre, music, and dance companies and ensembles, lectures by political figures, news commentators, specialists and prominent scholars, touring and resident exhibitions at the university's art museum and galleries, and a major motion picture series are among the special events featured each year at the university. Many of these activities are free.

The University Chamber Choir, Gospel Choir, University Singers, Men's Chorus, Women's Chorus, the Marching, Concert, and Symphonic Concert Bands, the University Symphony Orchestra, Opera Workshop and other specialized ensembles offer opportunities for those who want to perform in musical groups. Faculty, guest artists, many ensembles, and students present concerts throughout the academic year for university personnel and the community.

Auburn University Theatre produces a full season of exciting plays and musicals both on the main stage of the University Theatre and in the Theatre Upstairs. Auditions and participation in theatre productions are open to the entire university community. Admission to all AU Theatre productions is free to every Auburn student with a valid AU ID. The department is also home to one of the oldest student organizations on the Auburn campus, The Auburn University Players. Auburn University Theatre provides a great opportunity to participate in, and appreciate the performing arts.

The Auburn Studio of the Alabama Public Television Network produces programs which are seen throughout the state on the Alabama Educational Television network. WEGL-FM is the campus radio station, operated by students.

Parking Services

MISSION STATEMENT

The mission of Parking Services is to facilitate safe and convenient access to Auburn University while encouraging alternative modes of transportation.

PARKING PERMITS

Students, employees and visitors of Auburn University who park a vehicle on campus must register for and display a parking permit as prescribed in the Auburn University Parking and Traffic Regulations. Any vehicle without proper registration or not displaying a current permit on, or after, the first day of class for Fall Semester will be ticketed.

Parking permits are valid for one year beginning August 1 – July 31 of the following year. The initial registration period for commuting students and Faculty/Staff is July 1 – August 31. On-campus student online registration is open July 1 – July 31. Students and Employees are encouraged to register online.

Permit registration is conducted by the Parking Services Office. **Student Commuter Permits (C/PC)** requested prior to July 31st will be included in the random drawing for a PC (Proximate C-zone permit), if you so indicate when you pre-register online. You will be notified by e-mail as to the type of permit that you will receive on August 1st. All permits requested prior to one week before the start of the Fall Semester will be mailed to the address designated at the time of registration and the permit must be activated immediately upon receipt. All other commuter students who register for a permit must pick up their permit during the first two weeks of the Fall Semester in a designated room of the Student Center between the hours of 10:00 am and 5:00 pm. After that time, they must be picked up in the Parking Services Office. **Student Resident Permits (R)** will be distributed at move in at the assigned resident hall for students that have preregistered online prior to that date. There are a limited number of parking spaces in close proximity of residence halls. These proximate spaces are allocated by a random drawing. If you will be living in one of these areas and wish to be included in the random drawing, you will be able to indicate when you pre-register online. Resident students who have received preferred parking will have the appropriate permit available at move in. **Employees** have the option of registering their vehicle online and paying with pre-tax dollars via payroll deduction. Employee permits (A and B) purchased online will be mailed via campus mail until one week prior to the start of the Fall Semester. After this time, parking permits must be picked up in the Parking Services Office. Employees who do not wish to participate in the online registration and payroll deduction must register their vehicle and pay for the parking permit in person at the Parking Services Office. Picture ID is required for all transactions in the Parking Services Office.

All bicycles operated on campus must be registered annually online through tigeIt or at the Auburn University Parking Services Office. The following information is needed to register a bicycle at Auburn University: brand, color, number of speeds and the serial number. The serial number is usually located on the bottom bracket of the bicycle frame. The registration decal will be placed on the frame below the seat so that it can be easily seen. Bicycle registration is valid from August 1st to July 31st of the next year and must be renewed each year. Excluding the first 15 calendar days of Fall semester, any bicycle parked on the Auburn University campus that does not have a valid AU bicycle permit displayed, that is parked in an entrance way to a building, on sidewalks unattached to a rack, on handicap ramps or in any location where they obstruct pedestrian traffic will be removed and placed in the Auburn University impound lot at the owner's expense. In addition a \$10 ticket will be issued to the owner of the bicycle. Bicycles will be held by Parking Services for 90 days, and if not claimed, turned over to the Department of Property Control for disposal. A \$10.00 charge will be incurred by the claimant in order to retrieve a bicycle that has been impounded.

Auburn University Medical Permits are required for all vehicles displaying a permanent or temporary state issued handicap permit. The Auburn University Medical Permit must be picked up in the Parking Office and will only be issued upon presentation of proper documentation.

- **Permanent Disability** - Documentation must be obtained from the AU Office of Accessibility
- **Temporary Disability** - Provide proper documentation from the appropriate state.
- **Temporary Medical Permit** - Provide proper documentation from the AU Medical Clinic.

Student permit registration payments may be made through the student e-bill process or in person at the Office of Student Financial Services in Mary Martin Hall.

PARKING ENFORCEMENT

All zone parking restrictions, except resident and PC permits, are in effect from 7:00 a.m. to 5:00 p.m., Monday through Friday, throughout the year as long as the University is officially open or unless denoted otherwise. Resident permit parking zone restrictions are in effect 24 hours every day while classes are in session or exams are being held. During the summer, resident zones are also in effect for the residency areas that are being used for summer camps or for summer housing residents. PC permit parking zone restrictions are in effect from 7:00 a.m. to 2:30 p.m., Monday through Friday, during Fall and Spring semesters. Exceptions will be noted during all Auburn University home football games, other official University events, summer camps that are utilizing resident parking and other special events. Alternate parking will be provided for any zone that will be displaced by any of these events.

A notification of a parking violation will be placed on the vehicle. In addition, if the ticket can be associated with a faculty, staff or student; an e-mail will be sent the next business day to the person notifying them that they have received a ticket. All parking fines associated with a student of Auburn University or Auburn University-Montgomery will be transferred to their student e-bill account. Failure to pay the ticket may result in the student being unable to register for classes, graduate, or obtain transcripts. If the student withdraws from school, any outstanding parking ticket fines will be collected from any refunds or any nature due to the student. Late charges may be charged by the Bursar's Office on late payment of tickets.

APPEALING OF A TICKET

All appeals must be initiated within seven (7) days from the date that the ticket was issued. Appeals cannot be submitted until the ticket has been transferred to the student's e-bill account. Appeals cannot be submitted on any ticket that the person does not have a valid permit for the current permit year or the ticket has been reduced to \$10. Also any ticket issued for a misuse violation, as a warning, for driving on Central Campus, for a parking restriction during home football games, for a move-out violation or for parking in a PC-zone area without a PC permit **may not be appealed**.

The ticket is appealable through the tigerI website and must include remarks as to why the ticket is being appealed. The Parking Services Office will assign the appeal a hearing date and notify the person of the date of the hearing. There are three Appeals Boards that meet on Tuesday, Wednesday and Thursday every other week during the Fall and Spring semesters. The person has the right to appear before the Traffic Appeals Board and plead their case. The Board decision will be e-mailed to the appellant and the decision is final, although the person has the right to a second appeal. The second appeal must be submitted to the Parking Services Office in person within five (5) working days from the date that the appeal decision was sent to them. The Board has the choice of three decisions; approved, denied and adjusted. A decision of denied or adjusted does not remove the ticket from the determination if a vehicle will be towed or wheel locked.

WHEEL LOCKED/TOWED VEHICLE

Any motorized vehicle without a valid current AU parking permit is subject to being wheel locked or towed upon receiving the second ticket without a permit. Any motorized vehicle with a current AU parking permit is subject to being wheel locked or towed upon receiving the fifth ticket against the individual who the current permit was issued to. The date for the count of these tickets is from the first day of classes for Fall semester through the day before the first day of classes for the following Fall semester. Any ticket that has been excused or has been appealed and approved by the Auburn University Appeals Board will not count in this total. All others; including paid ticket, excused ticket, warning tickets and tickets adjusted to \$0 by the Auburn University Appeals Board will be counted.

To obtain the complete Auburn University Parking Rules and Regulations, click on the following link:

http://www.auburn.edu/administration/parking_transit/parking/pdf/parking.pdf

Student Health Services

Auburn University Medical Clinic

The Auburn University Medical Clinic provides a full range of primary and urgent medical care services for Auburn students, faculty, staff, spouses and dependents and visitors. Services are provided on an appointment basis. Walk-ins will be evaluated and given appointments or seen immediately based on the urgency of their condition. The clinical staff consists of fully licensed and board certified/eligible physicians, certified registered nurse practitioners and certified physician's assistants.

Student Health Services:

- Allergy and immunization
- Diagnostic services for illnesses and injuries
- Follow-up assessment and treatment
- Laboratory and x-ray
- Massage therapy
- Mental health
- Pharmacy
- Sports Medicine
- Women's health

Services are provided on a fee-for-service basis with on-site billing.

Student Insurance

The Student Government Association sponsors an Accident and Sickness Insurance Plan, which is available to registered undergraduate and graduate students, spouses and dependents. An insurance plan or its equivalent is required for all international students and recommended for all students. For information, questions or issues regarding claims, visit www.auburn.edu/aumc.com.

Telephone: (334)844-4416. Website: www.auburn.edu/aumc.

Student Counseling Services

The mission of Student Counseling Services is to provide comprehensive preventative and clinical mental health services to enhance the psychological well-being of individual students, as well as the broader campus culture. Student Counseling Services provide short-term individual and on-going group counseling to address the emotional and developmental concerns of students. Educational and academic-related, skill-building workshops and outreach presentations are offered to the campus community. Services are professional, confidential and free. Students needing long-term psychotherapy or 24-hour crisis management are provided an appropriate referral.

Telephone: (334) 844-5123. Website: www.auburn.edu/scs.

Health Promotion and Wellness Services

Health Promotion and Wellness Services provides educational and wellness programs, prevention efforts and other healthy initiatives to enhance the well-being of Auburn students and the campus community. Using assessment and research as a foundation for developing initiatives, Health Promotion and Wellness Services utilizes peer educators, workshops, consultations, training and social media initiatives to reach individuals, student groups and the Auburn campus community.

Telephone: (334) 844-1528. Website www.auburn.edu/healthandwellness.

Campus Recreation

Campus Recreation offers a variety of programs and services that are specifically designed for Auburn students to promote healthy lifestyles. With the opening of the Auburn Recreation & Wellness Center in August, students will have access to 240,000 square feet of innovative recreational amenities to meet their extracurricular needs.

Telephone: (334) 844-4716. Website: www.auburn.edu/campusrec.

James E. Martin Aquatics Center

This facility provides two swimming pools for use by Health and Human Performance classes, intercollegiate athletics, intramural and club sports, students, faculty, staff, and community members. Programs and events are planned and staffed to provide a healthy and safe aquatic environment. For information regarding programs and hours of operation, call (334) 844-4182.

Special Clinics

The Speech and Hearing Clinic of the Department of Communication Disorders, primarily a teaching facility, provides service for students with speech, hearing or language problems. These services may involve both diagnoses and treatment of problems.

TigerCard/Tiger Club Accounts

A Tiger Club Account provides a convenient means of making purchases on campus and at selected off-campus locations using the student's TigerCard. It can be used at bookstores, dining facilities, laundry and vending locations, copy centers, and other student services. The TigerCard is the students' official ID card. It is used at the Library, for door access on campus and may be required for other campus functions.

In order to make purchases using an AU TigerCard, an AU student first must establish a Tiger Club Account and deposit funds into that Account. Purchases will be debited from the available funds in the student's account. Cash withdrawals are not permitted and refunds may be made only on a closed account. Refunds will be transferred to the Office of Student Financial Services and applied to any debt owed Auburn University. The Office of Student Financial Services will refund any remaining balance to the student.

Applications for a Tiger Club Account must be made electronically at www.auburn.edu/tigercard. Itemized statements are available for viewing online.

Additional information regarding Tiger Club Accounts may be obtained by contacting the TigerCard/Tiger Club Accounts Office located in the Student Center, Auburn University, AL 36849. Telephone: (334) 344-1220 or 1-877-345-2058. Website: www.auburn.edu/tigercard.

Undergraduate Information

This section of the *Bulletin* lists the schools and colleges alphabetically and provides information about curricula within them as well as general descriptions of interdepartmental and interdisciplinary curricula and ROTC programs. Information about most college and school undergraduate admission, retention and graduation standards as well as other information about the college or school is also

provided here. Each undergraduate academic program offered by a school or college is presented in a curriculum model with required and elective courses listed in a possible semester-by-semester sequence. These models are provided as guides to help students and advisors plan the individual student's course of study. Students should realize, however, that it might not be possible to schedule every course in the year and semester as presented. Careful planning with the help of an academic advisor is usually necessary if students are to complete their programs in a timely manner and meet all course pre-requisites.

All undergraduate curricula can accommodate six hours of ROTC; military science courses may be taken in place of electives, and in some curricula, with permission, in place of certain required courses.

General Introduction

Auburn University offers a comprehensive array of programs that lead to a Bachelor's degree. These programs are administered by the Interdisciplinary Studies program and the following colleges and schools: the College of Agriculture; the College of Architecture, Design, and Construction; the College of Business; the College of Education; the Samuel Ginn College of Engineering; the School of Forestry and Wildlife Sciences; the College of Human Sciences; the College of Liberal Arts; the School of Nursing; and the College of Sciences and Mathematics. The Undergraduate Bulletin contains the academic policies and curricular guidelines that govern a student's progress toward his or her degree in any of these programs. Students should plan to meet regularly with an advisor to ensure that they are staying on track to graduation and to resolve any questions that may arise about their selected plan of study.

Academic Policies

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Academic Programs and Curricula

An **academic program** is an organized plan of study which, when successfully completed, is recognized by the awarding of a degree. It includes all courses and related activities required by the university and those required by a school, college, department or interdisciplinary program. **At Auburn University, the minimum number of semester hours in an undergraduate academic program is 120, including 41 semester hours of the Core Curriculum.** The academic program must include the University Core Curriculum and the major. It may also include a school or college core curriculum, a minor, and supporting course work. For undergraduates, the academic program is the most general term describing the formal course of their baccalaureate education. Students not completing an approved academic program do not qualify for baccalaureate degrees. Students who are completing an academic program may take courses in addition to those required by it including a minor or free electives beyond those required for graduation by their academic programs.

An undergraduate program option is a formal variation of an academic program by the offering department which meets objectives that may be more specifically focused. These additional objectives are integrated with the basic program. Some academic programs are structured only in the form of several formal program options. A program option is designated on the transcript. Other variants, which may carry the name of "track," "concentration," "emphasis," or similar terms, will not be designated on the transcript, but must meet the same minimal requirements for overlap as formal options. At Auburn University, all formal program options, like all academic programs, must include the Core Curriculum. Moreover, a formal program option must preserve the integrity of the academic program of which it is a variant by requiring at least half of the specific course work required by the program above and beyond the Core Curriculum. (In majors that are largely "menu-driven," with few specific course requirements, the menus of courses must contain sufficient overlap that a student in one option is not excluded from having half or more courses in common with students in any other option in that degree program.) All academic programs and designated variations (whether called options, tracks, concentrations, or any other name) must be approved by the Alabama Commission on Higher Education (ACHE).

A graduate program option is a formally approved variation of an academic program by the offering department which meets objectives that may be more specifically focused. These additional objectives are integrated with the basic program. A formal graduate program option must preserve the integrity of the academic program of which it is a variant. Specifically, the formal program option must 1) be in a recognized sub-field of the discipline; and 2) share at least half of the total credits of the degree program. Only formally approved graduate program options are designated on the transcript. Other less formal variants, which may carry the name of "track," "concentration," "emphasis," or similar terms, are not designated on the transcript; however, all academic programs and designated variations (whether called "options," "tracks," "concentrations," "emphases" or some similar term) must be approved by the Alabama Commission on Higher Education (ACHE).

A curriculum model is the schematic organization of an academic program that is listed in this *Bulletin*. A curriculum model is outlined for all undergraduate academic programs and program options and must be represented in the Auburn University Bulletin.

A **major** is usually the largest part of an academic program which differentiates it from other programs. The term designates that portion of the program which consists of a specified group of courses offered by a particular academic department or interdepartmental program. The major may include lower-division courses and always includes specified upper-division courses or choices among courses offered by the department or interdepartmental program. The major may include course work from other departments. The major does not include other components of the academic program: the Core Curriculum, a school or college curriculum (if any), a required second major (if any), a required minor (if any), supporting course work (if any), or free electives. **At Auburn University, all majors must represent substantial academic concentration in a well-defined discipline or interdisciplinary field. The minimum number of hours required for an undergraduate major is 30 hours of course work in the discipline or in a closely allied field. Of these hours, a minimum of 20 must be taken in upper-division (numbered 3000 or above) courses in the major. Departments must have the consent of other departments before requiring their courses in a major.**

A **minor** is an organized sequence or cluster of courses, including both lower- and upper-division courses, offered by a department or interdepartmental program. It is more restricted in scope than the major but may also have a somewhat different focus and objective that make it appropriate for students whose principal concentration is in another discipline. Not all departments or interdepartmental programs offer a minor. At Auburn University, the term minor designates those sequences or clusters of courses that have been formally proposed as minors by departments or interdepartmental programs and approved by the University Senate Curriculum Committee. The minimum number of semester hours in a minor is 15. Of these, six hours may be lower-division courses. The remaining semester hours in the minor (a minimum of nine hours) must be courses numbered 3000 or above. At least nine semester hours required for the minor must be completed at Auburn University. Courses a student has taken in fulfillment of the university Core Curriculum, the school/college core curriculum (if any) or the courses designated as "in the major" (e.g. counting toward the GPA "in the major") may not be used to fulfill a minor. Elective courses (not in the major) and required supporting courses (e.g. required courses in the academic program that are not used to fulfill the university Core Curriculum or the school/college core and which are not counted toward the GPA in the major) may be used toward a minor. Some academic programs may require students to earn a minor. Students whose academic programs do not require a minor are free to earn one, though in such cases they should recognize that fulfilling the requirements for a minor may delay their graduation. No academic program is required to allow for a minor in its curriculum model. Students must follow announced university procedures and deadlines for declaring a minor. In addition, students may not be awarded a minor after the degree for the major has been awarded. **No course taken under the S/U option may be counted toward a minor. Students must earn a minimum overall grade average of C (2.0) on all course work in the minor. Individual colleges, schools and departments may have higher grade-point requirements.**

The phrase "supporting course work" designates courses that are required for the completion of a specific academic program but not included in the University Core Curriculum, the major, the school or college core curriculum (if any), the minor (if required), and free electives. At Auburn University, academic programs may require courses that are not specific to the major but support the general

education and preparation of students in that program. Because these courses are usually outside the department of the major area of study, departments must have approval of the departments offering the courses they designate as required supporting course work. Supporting course work may be used in satisfying the requirements for a minor if a minor is not required by the academic major.

Second Baccalaureate and/or Concurrent Degrees

To earn a second baccalaureate degree, a student must complete all the additional requirements for the second degree (including course work in the major fields, college/school core requirements and courses in support of a major). At least 30 semester hours of the second degree must be unique to the second degree and may not be used as major, supporting or core courses for the first degree. In addition, the total number of hours to complete both degrees must total at least 30 additional semester hours. If 30 unique hours or 30 additional hours cannot be identified, the student is not eligible to receive a second baccalaureate degree. Students who are completing a second degree must comply with all the same grade-point requirements and residency requirements as other students. Students may elect to pursue and to receive the two degrees simultaneously if college and departmental requirements can be met simultaneously. Not all colleges allow students to receive two of the same degree from the same college, e.g., Business. All students should consult with their advisor concerning eligibility for a second degree, and if eligible, complete appropriate paperwork to declare the second degree. It is recommended that students declare the second degree prior to the beginning of the senior year. It is the student's responsibility to file a graduation application for each degree being sought. If the two degrees are in the same college, the student must file two applications with his/her dean's office. If the student is completing degrees in different colleges, one application must be filed with each dean's office. Students completing a second or two degrees concurrently receive a diploma for each degree. The transcript will list each degree and each major. Eligibility for graduation with academic honors for the second baccalaureate degree requires a minimum of 60 semester hours above the requirements for the first baccalaureate degree. Students earning the second baccalaureate degree must earn the minimum overall grade average required for the honors distinction on the 60 additional hours for the second degree and must be achieved on Auburn University courses. Honors calculations for the second baccalaureate degree follows the same procedures as graduation honors for the first degree (see Graduation Honors).

Students who completed a first baccalaureate degree at an institution other than Auburn University and subsequently pursue a second degree at Auburn University are not required to fulfill Auburn University's Core Curriculum. However, they may be required to take some classes listed as fulfilling the Auburn University Core Curriculum if these classes are pre-requisites to major classes.

Double Major

To earn a double major, a student must complete all requirements for one degree program, all the major courses in a second major (courses bolded in the curriculum model), and other requirements for the second major such as grade-point requirements. College/school cores or other supporting coursework associated with the second major are not required unless they serve as course prerequisites for second major courses.

At least 20 hours in the second major must be unique and not courses that have been used as major, supporting, or core courses in the degree program. If at least 20 hours of unique courses do not exist between the second major and the major, supporting, and core courses in the degree program, a double major is not possible.

To declare a double major, the student initiates the process by meeting with an academic advisor in the college of his/her current degree program. The advisor, in conjunction with the advisor in the second major, will determine if a least 20 hours of unique courses as noted above exist and, if so, provide instructions for declaring a double major. The student is responsible for ensuring that the appropriate process is completed, approved by the appropriate college(s), and submitted to the Registrar's Office prior to the senior year.

The student who completes the requirements for a double major is awarded one degree, e.g., BS or BA. The degree is determined by the degree program declared on the submitted form. If the second major is embedded in a degree program that leads to the same degree as the declared degree program, both majors will appear on the diploma and on the transcript. If the second major is embedded in a degree program that leads to a degree that is different from the declared degree program, the declared degree program dictates which degree and which baccalaureate major will appear on the diploma; the declared degree and both majors will appear on the transcript.

If a student changes his/her decision to pursue a double major, it is his/her responsibility to notify the Office of the Registrar and the dean's office of his/her college(s). Additional majors, beyond a double major, are allowed if the student can complete all the requirements outlined above, including 20 unique hours for any additional major not used as major, supporting, or core courses in the degree program or any of the other majors. A double major or additional majors may not be awarded after the degree for the first major has been granted.

Accelerated Bachelor's/Master's Degree Plan

The Accelerated Bachelor's/Master's Degree Plan allows Auburn students in some academic programs to count up to nine approved hours (in a 30-35-hour master's program) or 12 approved hours (in a 36-hour or greater master's program) toward both a bachelor's and a master's degrees. These hours must be at the graduate level.

To be considered for admission, students must have completed at least 45 credit hours and no more than 96 credit hours, including advanced placement credits. Transfer students must have completed at least 24 credit hours at Auburn University. All students must have a cumulative GPA of 3.4/4.0 or higher on course work completed at Auburn. Individual graduate programs may set higher standards or require additional criteria for admission to the accelerated degree program.

Students must complete an "Application for Admission to the Accelerated Bachelor's/Master's Degree Plan," and work with a graduate advisor in the degree-granting department to complete an approved Plan of Study, including: a) a list of the courses that count toward both the undergraduate and graduate degree; and b) the projected dates for the completion of the bachelor's and master's degrees. Students in the Honors College remain eligible to graduate with Honors while participating, and should consult with an Honors advisor.

Students must maintain a cumulative GPA (CGPA) of 3.4/4.0 or higher on Auburn University coursework; if the student completes the bachelor's degree requirements with a cumulative GPA of less than 3.4/4.0 at Auburn, the student cannot double-count credit hours and is terminated from the program.

Students must apply for admission to the Graduate School by the prescribed deadline. Admission to the Accelerated Degree Plan does not guarantee admission to the Graduate School. Students cannot opt to bypass the bachelor's degree.

Students may withdraw voluntarily from the Accelerated Plan at any time. Students must notify, in writing, the graduate program officer and the coordinator/director of undergraduate studies in their respective departments. Students who withdraw from the program voluntarily or because they do not meet program requirements will not be awarded graduate credit for double-counted courses. Students may contact their major program to see if it participates or visit the Graduate School's website for a listing of current ABM plans: <http://grad.auburn.edu/abm.html>.

Residence Policy. Percentage of Course work Earned in Residence at Auburn University Policy

A minimum of 25 percent of the total semester hours are required for the baccalaureate degree and at least 50% of the course work in the major must be earned in residence at Auburn University. As a general rule, these hours must be taken in the final year and in the school/college curriculum of graduation. The student's dean may waive the final year's residence and may also allow course credit to be earned at another institution during the final year. However, the minimum of 25 percent of course work in residence at Auburn University is a firm requirement.

Undergraduate Distance Learning

All regularly admitted campus-based students are eligible to take Auburn University distance courses. A campus-based student may not exceed the maximum class hour load by adding a distance education course.

All non-traditional/distance education students must apply and meet Auburn University's minimum admission requirements. Non-traditional/distance students will be permitted to register for distance courses only. These non-traditional/distance students are non-degree seeking students. Thus, a new application is required each academic year. Non-degree seeking students are not eligible for financial aid. A non-degree seeking student, who wishes to become a degree-seeking student, must apply to become a degree-seeking student and must meet the transfer requirements of 30 hours, including any Auburn University distance education courses, with an overall GPA of 2.5.

Information on available courses may be obtained from: Distance Learning & Testing Services, 118 Foy Hall, Auburn University, Auburn, AL 36849. Tel. (334) 844-3151 (<http://www.auburn.edu/biggio/distance-learning/>)

Credit For Military Science and Physical Education

A student may be allowed a maximum of 6 credits in military science courses toward graduation. All undergraduate curriculum models must accommodate these 6 credits in military science either through elective hours or substitutions. In addition, students may count additional hours of military science credits toward graduation if their curriculum model provides for additional free elective hours. A student may be allowed four credits of physical education activity courses toward graduation. A student who has served on active duty in the Armed Forces may receive physical education credits as follows: for less than six months of service, no credit; for six months to less than a year, two hours of credit for Physical Education; for one year or more in the service, three hours of credit. Application for credit for military experience should be submitted to the Office of the Registrar.

Academic Advising

Academic Advising Web Site: www.auburn.edu/academicadvising. In relation to registration for a given academic term and preparation of an academic plan of study, students are strongly encouraged to meet with an academic advisor in their chosen college or school. Contact information for the academic advisors in each college or school can be found on the website shown above. Please note that all students are strongly encouraged to meet with an academic advisor prior to registration. In selected colleges or schools, students are required to meet with an academic advisor prior to registration.

Change of Major or Curriculum

Students must have their dean's approval to change to another major within the same college or school. To change Colleges or Schools within the university, students must complete a Change of Major Form.

Internal Transfers and High-Demand Majors

Transfer applicants (from on and off campus) to certain high-demand majors must meet specific requirements for admission to the major.

In the College of Architecture, Design and Construction, the following programs have been approved for special admissions requirements based on space available in the major: Bachelor of Architecture, Bachelor of Interior Architecture, Bachelor of Science in Building Science, Bachelor of Industrial Design, and bachelor of Fine Arts in Graphic Design.

In the College of Education, the following programs have been approved for special admissions requirements based on space available in the major: Bachelor of Science in Early Childhood Education, Bachelor of Science in Exercise Science, and Bachelor of Science in Elementary Education.

In the College of Liberal Arts, the following programs have been approved for special admissions requirements based on space available: Bachelor of Science in Communication Disorders, Bachelor of Arts in Radio/Television/Film, Bachelor of Arts in Communication, Bachelor of Arts in Public Relations, Bachelor of Arts in Journalism, Bachelor of Arts in Health Administration, Bachelor of Arts in Music, Bachelor of Music Performance, Bachelor of Social Work, Bachelor of Fine Arts in Theater.

In addition, the Bachelor of Science in Nursing has been approved for special admissions requirements based on space available, and the Bachelor of Science in Interior Design in the College of Human Sciences has been approved for special admissions requirements based on space available.

Students wishing to transfer into a high demand major should contact the school or college advising office for details on the criteria for admission and the application process.

Curriculum Model Change

When the university changes a curriculum model, students in the altered curriculum may be required to complete the subjects and hours placed above the level to which they have progressed. They will not, however, be required to complete additional subjects placed in the curriculum below the level they have achieved. Courses shifted from one class level to another are exempt from this latter provision. Students' deans will determine the revised subject requirements, and the registrar will determine the revised total hour and grade-point requirements. In no case for students who are continuously enrolled, however, will the changed curriculum compel them to accumulate additional hours and grade points to graduate. In other words, students must complete the university core requirements in place during the term that they first enroll, and in general they must complete the school, college or major requirements in place when they declare a major. Undergraduate students who have not been enrolled at Auburn University for a period of five years or more and who are returning to the same curriculum may be subject to different university, college, school or departmental requirements than those which existed at the time of their initial entry, as well as those which existed at the program level when continuous enrollment ceased.

Academic Program Assessment

Auburn University is committed to fostering the academic achievement and personal development of its students. To carry out that commitment, the university continuously gathers information about the effectiveness of its academic programs, about the progress of its students toward educational and personal goals, and about the achievements and perspectives of its alumni. This information is used to monitor program effectiveness, to recognize educational trends and opportunities, and to develop a sound, factual basis for academic planning.

Each Auburn student is expected to participate in the university's assessment efforts. Academic programs use various means to gather assessment information, including portfolios, performances, achievement tests, comprehensive examinations, surveys, interviews, focus groups, evaluation forms, and other methods. While enrolled, a typical student can expect to take part in one or more of these

assessment activities. The total time spent on assessment activities is not likely to exceed 15 hours over the course of four years of enrollment. Participation in these activities may be a completion requirement for some degree programs.

Accommodation Policy for Students with Disabilities

Auburn University is committed to providing its students with an accessible campus and equitable learning environment. If you have a disability that requires reasonable academic accommodations, assistive technology, or support services, contact the Office of Accessibility for additional information, 1228 Haley Center; 334-844-2096 (Voice/TT) or visit our website at <http://accessibility.auburn.edu/>.

Appeals of Suspension

Students who incur Academic Suspension under the rules detailed in this Bulletin may appeal the decision to the Academic Appeals Committee if they believe extraordinary circumstances merit an exception to the rules. Any student on dismissal must appeal to their academic dean for readmission and must subsequently receive approval from the Office of the Provost. They must also have a grade point average of 1.85, be within 18 credit hours for graduation and demonstrate the appropriate changes in attitude necessary to be ready to complete their degree requirements.

Auburn University's General Education Goals and Outcomes

Auburn University has identified seven General Education Goals, representing the knowledge, skills, and perspectives graduates will attain through their academic programs, including the Core Curriculum. These goals and associated student learning outcomes are listed below.

General Education Goals

Information Literacy

- Students will be information literate.

Analytical Skills and Critical Thinking

- Students will be able to read analytically and critically.
- Students will be able to critique and construct an argument effectively.
- Students will be able to apply simple mathematical methods to the solution of real-world problems.
- Students will be able to select and use techniques and methods to solve open-ended, ill-defined or multi-step problems.

Effective Communication

- Students will be able to write effectively.
- Students will demonstrate effective oral communication skills.

Informed and Engaged Citizenship

- Students will be informed and engaged citizens of the United States and the world.

Intercultural Knowledge and Diversity Awareness

- Students will understand and appreciate the diversity of and within societies of the United States and the world.

Scientific Literacy

- Students will understand and appreciate methods and issues of science and technology.

Aesthetic Appreciation and Engagement

- Students will understand and appreciate the arts and aesthetics as ways of knowing and engaging with the world.

Students are introduced to these goals in the Core Curriculum and develop higher levels of competency within majors and by co-curricular experiences.

The Core Curriculum

The purpose of the Auburn University Core Curriculum is to foster the development of educated citizens and to help students begin to attain the University's General Education Goals – the knowledge, skills, and perspectives that are hallmarks of an Auburn graduate. By completing courses that introduce the General Education Goals and that represent a range of disciplines in the humanities, the sciences and mathematics, and the social sciences, students begin to acquire an educated appreciation of the natural world, of human life, and of the interactions between them. In this way students are provided a broad foundation for the learning experience and are prepared for the degree programs in their chosen field of study.

The seven broad General Education Goals are made more specific through eleven associated student learning outcomes. Each course approved for the Core Curriculum both represents a key academic discipline and focuses on helping students reach at least one General Education Student Learning Outcome (SLO). Thus students are working to attain these key outcomes as they learn about broad fields of study. Some approved Core courses focus on more than one General Education Student Learning Outcome, and most of these outcomes are addressed by more than one course, providing students with choices. Likewise, Core courses offer students several options within the broad areas of the humanities, sciences and mathematics, and the social sciences. Effective fall semester 2011, students must satisfy Core Curriculum requirements by completing at least one course focused on each General Education Student Learning Outcome and at the same time completing the indicated minimum number of credit-hours in English Composition, the humanities, science and mathematics, and the social sciences. With appropriate planning, students should be able to satisfy both requirements in no more than 41-42 credit-hours.

The approved Core courses are listed below, grouped by the General Education Student Learning Outcome they address. Courses ending in "7" are Honors courses.

Students will be information literate (SLO 1).

ENGL 1120	English Composition II ¹	3
or ENGL 1127	Honors Writing Seminar II	

Students will be able to read analytically and critically (SLO 2).

ENGL 2200/2207	World Literature before 1600	3
ENGL 2210/2217	World Literature after 1600	3
ENGL 2230	British Literature before 1789	3
ENGL 2240	British Literature after 1789	3
ENGL 2250	American Literature before 1865	3
ENGL 2260	American Literature after 1865	3
HONR 1007	Honors Technology and Culture I ¹	3
HONR 1017	Honors Technology and Culture II ¹	3
HONR 1027	Honors Sustainability and the Modern World I ¹	3
HONR 1037	Honors Sustainability and the Modern World II ¹	3
PHIL 1010/1017	Introduction to Logic ¹	3
PHIL 1020/1027	Introduction to Ethics ¹	3
PHIL 1030/1037	Ethics and the Health Sciences ¹	3
PHIL 1040	Business Ethics ¹	3
PHIL 1050	Introduction to Political Philosophy ¹	3
PHIL 1060	Philosophy East and West ¹	3
PHIL 1070	Art, Value, and Society ¹	3
PHIL 1080	Introduction to Philosophy of Religion ¹	3
PHIL 1090	Philosophy of Race Gender ¹	3
PHIL 1100	Introduction to Philosophy ¹	3

Students will be able to critique and construct an argument effectively (SLO 3).

ENGL 2200	World Literature before 1600	3
ENGL 2207	Honors World Literature before 1600	3
ENGL 2210	World Literature after 1600	3
ENGL 2217	Honors World Literature after 1600	3
ENGL 2230	British Literature before 1789	3
ENGL 2240	British Literature after 1789	3
ENGL 2250	American Literature before 1865	3
ENGL 2260	American Literature after 1865	3
HONR 1007	Honors Technology and Culture I ¹	3
HONR 1017	Honors Technology and Culture II ¹	3
HONR 1027	Honors Sustainability and the Modern World I ¹	3
HONR 1037	Honors Sustainability and the Modern World II ¹	3
PHIL 1010/1017	Introduction to Logic ¹	3
PHIL 1020/1027	Introduction to Ethics ¹	3
PHIL 1030/1037	Ethics and the Health Sciences ¹	3
PHIL 1040	Business Ethics ¹	3
PHIL 1050	Introduction to Political Philosophy ¹	3
PHIL 1060	Philosophy East and West ¹	3
PHIL 1070	Art, Value, and Society ¹	3
PHIL 1080	Introduction to Philosophy of Religion ¹	3
PHIL 1090	Philosophy of Race Gender ¹	3
PHIL 1100	Introduction to Philosophy ¹	3

Students will be able to apply simple mathematical methods to real-world problems (SLO 4).**Students will be able to select and use techniques and methods to solve open-ended, ill-defined or multi-step problems (SLO 5).**

MATH 1100	Finite Math and Applications ¹	3
MATH 1120	Pre-Calculus Algebra ¹	3
MATH 1130	Pre-Calculus Trigonometry ¹	3
MATH 1150	Pre-Calculus Algebra and Trigonometry ¹	4
MATH 1610/1617	Calculus I ¹	4
MATH 1680	Calculus with Business Applications I ¹	4

Students will be able to write effectively (SLO 6).

ENGL 1100	English Composition I	3
or ENGL 1107	Honors Writing Seminar I	
ENGL 1120	English Composition II ¹	3
or ENGL 1127	Honors Writing Seminar II	

Students will demonstrate effective oral communication skills(SLO 7). ²

COMM 1000	Public Speaking	3
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Students will be informed and engaged citizens of the United States and the world (SLO 8).

ECON 2020/2027	Principles of Microeconomics	3
ECON 2030/2037	Principles of Macroeconomics	3

HIST 1010/1017	World History I ¹	3
HIST 1020/1027	World History II ¹	3
HIST 1210/1217	Technology and Civilization I ¹	3
HIST 1220/1227	Technology And Civilization II ¹	3
HONR 1007	Honors Technology and Culture I ¹	3
HONR 1017	Honors Technology and Culture II ¹	3
HONR 1027	Honors Sustainability and the Modern World I	3
HONR 1037	Honors Sustainability and the Modern World II	3
POLI 1050/1057	Global Politics and Issues	3
POLI 1090/1097	American Government in Multicultural World	3
UNIV 2710/HONR 2717	The Human Odyssey I ¹	3
UNIV 2720/HONR 2727	The Human Odyssey II ¹	3

Students will understand and appreciate the diversity of and within societies of the United States and the world (SLO 9).

ANTH 1000/1007	Introduction to Anthropology	3
FLGC 1150	Global Fluency and Awareness	3
GEOG 1010/1017	Global Geography	3
HIST 1010/1017	World History I ¹	3
HIST 1020/1027	World History II ¹	3
HIST 1210/1217	Technology and Civilization I ¹	3
HIST 1220/1227	Technology And Civilization II ¹	3
PSYC 2010/2017	Introduction to Psychology	3
SOCY 1000/1007	Sociology Global Perspective	3
UNIV 2710/HONR 2717	The Human Odyssey I ¹	3
UNIV 2720/HONR 2727	The Human Odyssey II ¹	3

Students will understand and appreciate methods and issues of science and technology (SLO 10).

BIOL 1000	Introduction to Biology	4
BIOL 1010	A Survey of Life	4
BIOL 1020/1027	Principles of Biology	4
BIOL 1030/1037	Organismal Biology	4
CHEM 1010 & CHEM 1011	Survey of Chemistry I and Survey of Chemistry I Laboratory	4
CHEM 1020 & CHEM 1021	Survey of Chemistry II and Survey of Chemistry II Laboratory	4
CHEM 1030 & CHEM 1031	Fundamentals Chemistry I and Fundamental Chemistry I Laboratory	4
CHEM 1040 & CHEM 1041	Fundamental Chemistry II and Fundamental Chemistry II Laboratory	4
CHEM 1110 & CHEM 1111	General Chemistry I and General Chemistry I Laboratory	4
CHEM 1117 & CHEM 1118	Honors General Chemistry I and Honors General Chemistry I Laboratory	4
CHEM 1120 & CHEM 1121	General Chemistry for Scientists and Engineers II and General Chemistry II Laboratory	4
CHEM 1127 & CHEM 1128	Honors General Chemistry II and Honors General Chemistry II Laboratory	4

GEOL 1100	Physical Geology	4
GEOL 1110	Historical Geology	4
PHYS 1000	Foundations of Physics	4
PHYS 1150	Astronomy	4
PHYS 1500	General Physics I	4
PHYS 1510	General Physics II	4
PHYS 1600/1607	Engineering Physics I	4
PHYS 1610/1617	Engineering Physics II	4
SCMH 1010/1017	Concepts of Science	4

Students will understand and appreciate the arts and aesthetics as ways of knowing and engaging with the world (SLO 11).

ARCH 2600	The Art of Architecture, Place, and Culture	3
ARTS 1510	Looking at Art: Approaches to Interpretation	3
ARTS 1710/1717	Introduction to Art History I	3
ARTS 1720/1727	Introduction to Art History II	3
ARTS 1730/1737	Introduction to Art History III	3
ENGL 2200	World Literature before 1600	3
ENGL 2207	Honors World Literature before 1600	3
ENGL 2210	World Literature after 1600	3
ENGL 2217	Honors World Literature after 1600	3
ENGL 2230	British Literature before 1789	3
ENGL 2240	British Literature after 1789	3
ENGL 2250	American Literature before 1865	3
ENGL 2260	American Literature after 1865	3
MUSI 2730/2737	Appreciation of Music	3
RTVF 2350	Introduction to Film Studies	3
THEA 2010/2017	Introduction to Theatre	3

¹ Course focuses on more than one General Education Outcome.

² For some students, the Oral Communication Outcome is addressed in one or more courses in the major rather than in the Core Curriculum.

Students must also satisfy Core requirements in terms of broad academic areas. Approved Core courses grouped by the four required academic areas are listed below:

English Composition: 6 hours required

ENGL 1100	English Composition I	3
or ENGL 1107	Honors Writing Seminar I	
ENGL 1120	English Composition II	3
or ENGL 1127	Honors Writing Seminar II	
Total Hours		6

Humanities: 12 total hours required

Literature (at least 3 hours)

Students must complete at least one literature course and a history sequence OR a literature sequence and at least one history course.

Select at least one of the following:

3-6

ENGL 2200	World Literature before 1600
ENGL 2207	Honors World Literature before 1600
ENGL 2210	World Literature after 1600

ENGL 2217	Honors World Literature after 1600
ENGL 2230	British Literature before 1789
ENGL 2240	British Literature after 1789
ENGL 2250	American Literature before 1865
ENGL 2260	American Literature after 1865

Fine Arts (at least 3 hrs)

Students must complete at least one fine arts course from this list.

Select one of the following:

3

ARCH 2600	The Art of Architecture, Place, and Culture
ARTS 1510	Looking at Art: Approaches to Interpretation
ARTS 1710	Introduction to Art History I
ARTS 1717	Honors Introduction Into Art History I
ARTS 1720	Introduction to Art History II
ARTS 1727	Honors Intro Art History II
ARTS 1730	Introduction to Art History III
ARTS 1737	Honors Introduction to Art History III
MUSI 2730	Appreciation of Music
MUSI 2737	Honors Appreciation of Music
RTVF 2350	Introduction to Film Studies
THEA 2010	Introduction to Theatre
THEA 2017	Honors Introduction to the Theatre

Other Humanities Choices

In addition to the Literature and Fine Arts courses listed above, students may select courses from this list to complete the required 12 hours in Humanities.

COMM 1000	Public Speaking	3
FLGC 1150	Global Fluency and Awareness	3
HONR 1007	Honors Technology and Culture I	3
PHIL 1010/1017	Introduction to Logic	3
PHIL 1020/1027	Introduction to Ethics	3
PHIL 1030/1037	Ethics and the Health Sciences	3
PHIL 1040	Business Ethics	3
PHIL 1050	Introduction to Political Philosophy	3
PHIL 1060	Philosophy East and West	3
PHIL 1070	Art, Value, and Society	3
PHIL 1080	Introduction to Philosophy of Religion	3
PHIL 1090	Philosophy of Race Gender	3
PHIL 1100	Introduction to Philosophy	3
UNIV 2710/HONR 2717	The Human Odyssey I	3

Science and Mathematics: 11-12 hours required

Mathematics (3-4 hrs)

Students must complete at least one mathematics course from this list.

Select one of the following:

3-4

MATH 1100	Finite Math and Applications
MATH 1120	Pre-Calculus Algebra
MATH 1130	Pre-Calculus Trigonometry

MATH 1150	Pre-Calculus Algebra and Trigonometry
MATH 1610	Calculus I
MATH 1617	Honors Calculus I
MATH 1680	Calculus with Business Applications I

Science sequence (8 hrs)

Students must complete a sequence from this list.

Select one of the following Series:

8

Series A

BIOL 1000	Introduction to Biology
BIOL 1010	A Survey of Life

Series B

BIOL 1020/1027	Principles of Biology
BIOL 1030/1037	Organismal Biology

Series C

CHEM 1010 & CHEM 1011	Survey of Chemistry I and Survey of Chemistry I Laboratory
CHEM 1020 & CHEM 1021	Survey of Chemistry II and Survey of Chemistry II Laboratory

Series D

CHEM 1030 & CHEM 1031	Fundamentals Chemistry I and Fundamental Chemistry I Laboratory
CHEM 1040 & CHEM 1041	Fundamental Chemistry II and Fundamental Chemistry II Laboratory

Series E

Select one of the following:

CHEM 1110 & CHEM 1111	General Chemistry I and General Chemistry I Laboratory
CHEM 1117 & CHEM 1118	Honors General Chemistry I and Honors General Chemistry I Laboratory

And select one of the following:

CHEM 1120 & CHEM 1121	General Chemistry for Scientists and Engineers II and General Chemistry II Laboratory
CHEM 1127 & CHEM 1128	Honors General Chemistry II and Honors General Chemistry II Laboratory

Series F

GEOL 1100	Physical Geology
GEOL 1110	Historical Geology

Series G

PHYS 1500	General Physics I
PHYS 1510	General Physics II

Series H

PHYS 1600/1617	Engineering Physics I
PHYS 1610/1617	Engineering Physics II

Series I

SCMH 1010/1017	Concepts of Science ¹
BIOL 1010	A Survey of Life ²

Series J

SCMH 1010/1017	Concepts of Science ¹
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CHEM 1010 & CHEM 1011	Survey of Chemistry I and Survey of Chemistry I Laboratory ²
Series K	
SCMH 1010/1017	Concepts of Science ¹
GEOL 1100	Physical Geology ²
Series L	
SCMH 1010/1017	Concepts of Science ¹
PHYS 1000	Foundations of Physics ²
Series M	
SCMH 1010/1017	Concepts of Science ¹
PHYS 1150	Astronomy ²

Social Sciences: 12 hours total required

History (at least 3 hours)

Students must complete at least one History course & a Literature sequence OR a History sequence and at least one Literature course.

Select one of the following:

3

HIST 1010	World History I
HIST 1017	Honors World History I
HIST 1020	World History II
HIST 1027	Honors World History II
HIST 1210	Technology and Civilization I
HIST 1217	Honors Technology and Civilization I
HIST 1220	Technology And Civilization II
HIST 1227	Honors Technology and Civilization II

Other Social Sciences

In addition to the history courses listed above, students can select hours in other Social Science courses listed below to total 12.

ANTH 1000/1007	Introduction to Anthropology	3
ECON 2020/2027	Principles of Microeconomics	3
ECON 2030/2037	Principles of Macroeconomics	3
GEOG 1010/1017	Global Geography	3
HONR 1017	Honors Technology and Culture II	3
HONR 1027	Honors Sustainability and the Modern World I	3
HONR 1037	Honors Sustainability and the Modern World II	3
POLI 1050/1057	Global Politics and Issues	3
POLI 1090/1097	American Government in Multicultural World	3
PSYC 2010/2017	Introduction to Psychology	3
SOCY 1000/1007	Sociology Global Perspective	3
UNIV 2720/HONR 2727	The Human Odyssey II	3

¹ SCMH 1010 or SCMH 1017 should be taken as the first course in this sequence.

² Other pairings with SCMH 1010 or SCMH 1017 may be possible. See academic advisor for details.

English Composition Requirements

Students who enroll at Auburn University as freshmen and students who transfer from another institution into Auburn must meet Auburn's six semester hour English composition requirement. Requirements are based on when the student first began collegiate study and whether the student's English composition courses were taken at Auburn University. If a student's particular situation is not

covered in the explanations below, or if a student has questions about his or her status, then the student should contact the Director of Composition by calling the Department of English at (334) 844-4620 or via e-mail at english@auburn.edu.

Students beginning collegiate study at Auburn as freshmen in fall 2000 or later must complete English Composition I and II (ENGL 1100 and ENGL 1120) or the Honors equivalents (ENGL 1107 and ENGL 1127) with a grade of C or better in each course. The grades of C or better are required by the Articulation and General Studies Committee agreement. Students who earn a grade of D or F in a composition course at Auburn must repeat that course. Students may repeat the course at another institution, unless they wish to use the grade adjustment policy to exclude the grade of D or F. Students must complete the composition sequence to be eligible to take Core Literature courses.

Students who began collegiate study at Auburn University between summer 1998 and summer 2000 have met the composition requirement if they completed ENGL 0110 and 0112 (or the Honors equivalents) with a grade of C or better in each.

Students who began collegiate study at Auburn University between fall 1991 and spring 1998 have met the composition requirement if they have completed ENGL 0110 or 0118. (For students in this group graduating after summer 1998, the core junior-level writing requirement was waived by the Provost.)

Transfer students beginning collegiate study at another institution in summer 1998 or later must meet Auburn's composition requirement. They may do so in one of two ways: (1) take English Composition I and II at another institution, provided these courses are comparable in scope and coverage to ENGL 1100 - ENGL 1120 and there is no duplication of hours, and earn a grade of C or better in each, or (2) take ENGL 1100 - ENGL 1120 (or ENGL 1107 - ENGL 1127) at Auburn and earn a grade of C or better in each.

Transfer students who have earned a grade of C or better in English Composition I, and earned three semester hours or five quarter hours at another institution will be required to take ENGL 1120 (or ENGL 1127) at Auburn. Students may also fulfill the requirement for ENGL 1120 (or ENGL 1127) by taking an English Composition II course at another institution, provided the course is similar in scope and coverage to ENGL 1120 (or ENGL 1127) and they earn a grade of C or better.

Transfer students who began collegiate study at another institution between fall 1991 and spring 1998 must meet the same composition requirement as students who began college at Auburn during the same period. They may meet the requirement by transferring a writing course taken at another institution, provided this course is comparable in scope and coverage to English Composition I as offered at Auburn during this period, or by taking ENGL 1100 (or ENGL 1107) at Auburn University.

Transfer students who have been exempted on the basis of standardized test scores from English Composition I carrying five quarter hours or three semester hours at another institution, and who have earned a grade of C or better in a subsequent English composition course at the same institution carrying the same amount of credit, will have fulfilled Auburn's composition requirement. Transfer students who have been exempted with credit will have both the exemption credit and course credit accepted at Auburn. Transfer students who have been exempted without credit will be given the course credit and, in addition, will be awarded sufficient advanced standing credit to fulfill Auburn's English composition requirement.

Transfer students who have been exempted from English Composition I at another institution but have had no subsequent English composition course there or have not earned a grade of C or better in the subsequent course must still complete Auburn's six semester hour freshman composition requirement. However, if they meet any of Auburn's criteria for exemption from ENGL 1100, they will receive three semester hours of credit for ENGL 1100 at Auburn and will be required to take ENGL 1120 (or ENGL 1127) at Auburn. Additionally, if they meet any of Auburn's criteria for exemption from ENGL 1120, they will receive three semester hours of credit for ENGL 1120.

All transfer students should confer with their major academic advisor concerning the composition requirement as soon as possible after enrolling at Auburn.

Students who enter an undergraduate program at Auburn after receiving a bachelor's degree from an accredited institution are exempt from meeting the composition requirement.

All students may be eligible to exempt ENGL 1100 and/or ENGL 1120 with credit on the basis of their score in one of the following standardized tests: the English portion of the ACT; the verbal portion of the SAT; the International Baccalaureate English A1 exam; or the CEEB Advanced Placement Exam in English. Note that CLEP test scores are not eligible for exemption. The exemption scores for each test are reviewed each year and are available in the Auburn University Advanced Placement Program, which is distributed by the Office of the Registrar (http://www.auburn.edu/administration/registrar/helpful_resources/enrollment/ap-ib-clep-information.html).

Literature Requirements

Students beginning college work in Fall 2011 or after must take at least one Core literature course. They may take a second course in the same literature to complete a sequence. Completion of the freshman composition requirement is a pre-requisite for all the literature courses.

All Auburn students beginning college work before Fall 2011 must fulfill the Core Curriculum literature requirements by taking one of three sequences:

ENGL 2200/2207	World Literature before 1600
ENGL 2210/2217	World Literature after 1600
ENGL 2230 & ENGL 2240	British Literature before 1789 and British Literature after 1789
ENGL 2250 & ENGL 2260	American Literature before 1865 and American Literature after 1865

Literature courses taken at other institutions may fulfill the Core literature requirement with the following provisions:

1. Students may transfer as equivalents of the three sequences for Core Curriculum credit only sophomore-level literature survey courses covering a broad historical period.
2. Students transferring a single literature course may receive credit for ENGL 2200 only if it is the first course in a World Literature sequence and includes literature of the ancient world. Any survey of modern literature (beginning at any time after 1600 and extending to the present), whether world literature or a national literature, will transfer as credit for ENGL 2210.
3. Freshman literature courses and literature courses based on genres (poetry, the short story, the novel), themes, or narrowly defined historical periods will not fulfill the Core literature requirements but are eligible for transfer as electives.

Students or advisors with special questions about placement or credit for the Core literature requirements may call the Coordinator of Core Literature at (334) 844-4620.

History Requirements

One of the purposes of the university's Core Curriculum is to give students an understanding of their culture and its backgrounds. Course sequences designed especially for this purpose are those in World History and Technology and Civilization. Native students beginning college work before Fall 2011 must earn six hours of credit in one of these sequences. Students beginning college work in Fall 2011 or after must have at least one Core history course and a complete Core sequence in either literature or history.

Credit in history earned at another institution may be allowed on transfer as shown below in meeting this particular requirement.

1. If transfer students have three hours in the first course of a broad, introductory two-course sequence in world history or western civilization or technology and civilization or U.S. history they must complete a history sequence, by taking HIST 1020/HIST 1027 (for world history and western civilization), HIST 1220/HIST 1227 (for tech. and civ.) or HIST 2020 (for U.S. history). A transfer student who has taken the last course in a similar two-course sequence would take HIST 1010/HIST 1017 or HIST 1210/HIST 1217 or HIST 2010/HIST 2017 to complete a sequence.
2. Students entering an undergraduate program at Auburn, after earning bachelors' degrees from other accredited universities, may be exempted from the history requirements unless their curricula specify otherwise.

Oral Communication Requirement

All Auburn University bachelor's degree programs provide components to ensure competence in oral communication skills. Program information documenting oral communication components is maintained in the Office of the Provost/Vice President for Academic Affairs. Appropriate accommodations will be made to enable individuals with disabilities to satisfy this requirement.

Bachelor's Degree Requirements

To earn the bachelor's degree from Auburn University students must complete the requirements of the university's Core Curriculum, and they must choose a curriculum and complete its requirements and those of the college or school with at least a 2.0 average in all Auburn courses attempted, at least a 2.0 average on transfer credits accepted for their degree program, and a 2.0 average in all course work in the major. These requirements are university requirements. Individual colleges, schools and departments may have higher requirements. Credits required for graduation are at least 120 hours. The student's dean clears subject and non-course requirements

in the curriculum; the registrar, together with the dean's office, clears total hours, GPA, and freshman English. A list of specific courses identified as major courses in each curriculum is available in the appropriate dean's office.

Class Attendance

Students are expected to attend all their scheduled classes. College work requires regular class attendance as well as careful preparation. Specific policies regarding class attendance are the prerogative of individual faculty members. Faculty shall inform each class in writing at the beginning of the course regarding the effect of absences on the determination of grades.

The student is expected to carry out all assigned work and to take examinations at the class period designated by the instructor. Failure to carry out these assignments or to take examinations at the designated times may result in an appropriate reduction in grade, except as provided below.

Instructors shall determine the policy regarding grading which they feel is best for the course. This policy shall be presented to the class, in writing, at the beginning of the term and will govern the actions of the instructor in the course.

Arrangement to make up missed major examinations (e.g. hour exams, midterm exams) due to properly authorized excused absences (as defined by the Student Policy eHandbook) shall be initiated by the student within one week from the end of the period of the excused absence. Normally, a make-up exam shall occur within two weeks from the time that the student initiates arrangements for it. Instructors are encouraged to refrain from giving make-up examinations during the last three days prior to the first day of final examinations. The format of make-up exams and opportunities for students to make up work other than major examinations are at the discretion of the instructor whose make-up policies should be stated in writing at the beginning of the term. Instructors are expected to excuse absences for:

1. Illness of the student or serious illness of a member of the student's immediate family. The instructor may request appropriate verification.
2. The death of a member of the student's immediate family. The instructor may request appropriate verification.
3. Trips for members of the student organizations sponsored by an academic unit, trips for university classes, and trips for participation in intercollegiate athletic events. When feasible, the student must notify the instructor prior to such absences, but in no case more than one week after the absence. Instructors may request formal notification from appropriate university personnel to document the student's participation in such trips.
4. Religious holidays. Students are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays.
5. Subpoena for court appearance.
6. Any other reason the instructor deems appropriate.

If the instructor does not appear within 20 minutes after the designated class hour, it may be assumed the class is canceled.

It is university policy that all classes will meet as scheduled on the last day before and the first day after holiday periods designated by the university.

Unresolved problems regarding class attendance or procedures should be referred to the University Student Academic Grievance Committee.

Examinations

Examinations are classified as (1) final examinations at the end of each term; (2) special examinations; and (3) other course examinations as determined by the instructor.

Announced tests in undergraduate courses will be administered at a regularly scheduled meeting of the course. Exceptions to this regulation may arise in specialized courses requiring performance or oral tests, and in multiple-sectioned laboratory classes requiring practical laboratory tests. Faculty having sound reasons for scheduling tests at times other than regularly scheduled meeting times are to obtain approval from the department head prior to the beginning of the term, and are to present a written schedule of these changes to the class during the first few days of the term. Rescheduled tests are not to interfere with other scheduled academic endeavors of the students involved, and an appropriate reduction in regularly scheduled class time is to be given to compensate for the rescheduled test period.

Final Examinations

A final examination is a desirable means of evaluation in most undergraduate courses. In unusual circumstances, performance tests, term papers, research projects or other forms of evaluation appropriate to the objectives of the course may be substituted for a final examination with the approval of the department head, who will report such action to the dean. Instructors not giving a final examination are to present to the class at the beginning of the term a written description of the forms of evaluation to be used and the means of determining final grades. The professor teaching a 6000-level course or higher shall determine whether a formal final examination is appropriate.

Final examinations are to be given as scheduled in the term examination schedule. Exceptions to this policy require prior approval by the provost. Rescheduled examinations must not interfere with scheduled academic activities of the students involved.

Auburn University students are provided the conditional right to take no more than two (2) final examinations in a single calendar day if the student provides the designated timely notice to the affected faculty members. The deadline for student requests to reschedule final examinations with affected faculty members, under this policy, is the Mid-Semester Day (mid-term in the summer). Students with three or more final examinations scheduled on one calendar day should contact instructors on or before the designated deadline to request rescheduling so that no more than two final examinations fall on any calendar day. Any Auburn student unable to get any instructor(s) to voluntarily move the examination(s) will present this situation to the associate dean of the student's major college and, after verification, that associate dean will contact the faculty member(s) scheduled for the middle exam period(s) of the student's scheduled finals to arrange to reschedule the exam(s). Each student must contact the appropriate associate dean within one week following the mid-semester date, either to report the rescheduled examination(s) or to ask for assistance in rescheduling.

Student Academic Grievance Policy

The Student Academic Grievance policy, which appears in full in the Student Policy eHandbook, is designed to resolve academic grievances of students which result from actions of faculty or administrators.

Graduation

To earn a bachelor's degree, a student must earn a 2.00 GPA on all courses attempted at Auburn, a 2.00 GPA on all transfer courses which apply to degree requirements and a 2.00 GPA on all work in the student's major. These are university requirements. Individual colleges and schools may have higher requirements. Identification of the specific courses counted as courses in the major in an academic program is available in the dean's office.

Clearing for Graduation

Seniors should register for UNIV 4AA0 in the term before they graduate in order to arrange for a graduation check through their dean's office; they must also clear deferred grades by the 15th day of the graduation term for courses to be used toward degree requirements. Independent (Asynchronous) Distance Education courses must be completed by mid-term prior to graduation.

Students must be registered at Auburn University in the term in which degree requirements are completed. Students who have completed all course requirements but who lack other requirements (non-thesis final exam, internship, etc.) must register for UNIV 4AA0 for the term in which those requirements are completed and/or the student is scheduled to graduate. The undergraduate student who is registered for no credit hours at Auburn University in the term of graduation must register for UNDG 4900 in any semester during which the staff or the facilities of the university are used for academic work, for removal of an "Incomplete" grade, or when a student is completing graduation coursework requirements at an Institution other than AU. Undergraduate students who have completed all courses and requirements for graduation should register for UNIV 4AA0. **Students who have in a previous term completed all requirements for the degree, upon receipt of a "certificate of completion" in the Office of the Registrar (undergraduate) will be required to register only for UNIV 4AA0 in the actual term in which the degree is conferred.** Graduate students should refer to page 127 of this *Bulletin* under "Registration and Graduation Requirements" for graduate students.

A graduation fee is payable to Office of Student Financial Services at the beginning of the term of graduation. A student who is a candidate for a degree in a term in which no credit work is taken is required to register in such term as a pre-requisite to graduation. (For members of the faculty and staff the charge is reduced to \$5.00.) The graduation fee is in addition to this charge. See "Fees and Charges" in this *Bulletin* for details. If a student is in default on any payment due to the university, the diploma and academic record will not be issued until the matter is cleared. Degrees are conferred each term. Commencement exercises are held after fall and spring semesters and summer term. If a student does not plan to attend the exercises, arrangements should be made with the dean or the Office of the Registrar to receive the degree in absentia.

Core for Students Starting College Before 2011

Students beginning college work before Fall 2011 must meet the previously established requirements listed below¹:

English Composition		6
ENGL 1100	English Composition I	
ENGL 1120	English Composition II	
English Literature		6
ENGL 2200	World Literature before 1600	
ENGL 2210	World Literature after 1600	
ENGL 2230	British Literature before 1789	
ENGL 2240	British Literature after 1789	
ENGL 2250	American Literature before 1865	
ENGL 2260	American Literature after 1865	
Philosophy		3
PHIL 1010	Introduction to Logic	
PHIL 1020	Introduction to Ethics	
PHIL 1030	Ethics and the Health Sciences	
PHIL 1040	Business Ethics	
Fine Arts		3
ARCH 2600	The Art of Architecture, Place, and Culture	
ARTS 1710	Introduction to Art History I	
ARTS 1720	Introduction to Art History II	
ARTS 1730	Introduction to Art History III	
MUSI 2730	Appreciation of Music	
THEA 1010	Introduction to Theatre for Majors I	
THEA 2010	Introduction to Theatre	
Mathematics		3
MATH 1100	Finite Math and Applications	
MATH 1120	Pre-Calculus Algebra	
MATH 1130	Pre-Calculus Trigonometry	
MATH 1150	Pre-Calculus Algebra and Trigonometry	
MATH 1610	Calculus I	
MATH 1680	Calculus with Business Applications I	
MATH 1710	Calculus for Engineering and Science I	
Science (in sequence)		8
BIOL 1000	Introduction to Biology	
BIOL 1010	A Survey of Life	
BIOL 1020	Principles of Biology	
BIOL 1030	Organismal Biology	
CHEM 1010	Survey of Chemistry I	
CHEM 1020	Survey of Chemistry II	
CHEM 1030	Fundamentals Chemistry I	
CHEM 1040	Fundamental Chemistry II	
CHEM 1110	General Chemistry I	
CHEM 1120	General Chemistry for Scientists and Engineers II	
GEOL 1100	Physical Geology	
GEOL 1110	Historical Geology	
PHYS 1000	Foundations of Physics	
PHYS 1150	Astronomy	
PHYS 1500	General Physics I	

PHYS 1510	General Physics II	
PHYS 1600	Engineering Physics I	
PHYS 1610	Engineering Physics II	
SCMH 1010	Concepts of Science	
History (in sequence)		6
HIST 1010/1017	World History I	
HIST 1020/1027	World History II	
HIST 1210/1217	Technology and Civilization I	
HIST 1220/1227	Technology And Civilization II	
UNIV 2710	The Human Odyssey I	
UNIV 2720	The Human Odyssey II	
Social Science		6
Group I (select one)		
ANTH 1000	Introduction to Anthropology	
GEOG 1010	Global Geography	
PSYC 2010	Introduction to Psychology	
SOCY 1000	Sociology Global Perspective	
Group II (select one)		
ECON 2020	Principles of Microeconomics	
POLI 1020	Political Economy	
POLI 1090	American Government in Multicultural World	

¹ Students in the Honors College may take Honors sections of Core courses as available.

English Composition Requirements

Students who enroll at Auburn University as freshmen and students who transfer from another institution into Auburn must meet Auburn's six semester hour English composition requirement. Requirements are based on when the student first began collegiate study and whether the student's English composition courses were taken at Auburn University. If a student's particular situation is not covered in the explanations below, or if a student has questions about his or her status, then the student should contact the Director of Composition by calling the Department of English at (334) 844-4620 or via e-mail at english@auburn.edu.

Students beginning collegiate study at Auburn as freshmen in fall 2000 or later must complete English Composition I and II (ENGL 1100 and ENGL 1120) or the Honors equivalents (ENGL 1107 and ENGL 1127) with a grade of C or better in each course. The grades of C or better are required by the Articulation and General Studies Committee agreement. Students who earn a grade of D or F in a composition course at Auburn must repeat that course. Students may repeat the course at another institution, unless they wish to use the grade adjustment policy to exclude the grade of D or F. Students must complete the composition sequence to be eligible to take Core Literature courses.

Students who began collegiate study at Auburn University between summer 1998 and summer 2000 have met the composition requirement if they completed ENGL 0110 and 0112 (or the Honors equivalents) with a grade of C or better in each.

Students who began collegiate study at Auburn University between fall 1991 and spring 1998 have met the composition requirement if they have completed ENGL 0110 or 0118. (For students in this group graduating after summer 1998, the core junior-level writing requirement was waived by the Provost.)

Transfer students beginning collegiate study at another institution in summer 1998 or later must meet Auburn's composition requirement. They may do so in one of two ways: (1) take English Composition I and II at another institution, provided these courses are comparable in scope and coverage to ENGL 1100 - ENGL 1120 and there is no duplication of hours, and earn a grade of C or better in each, or (2) take ENGL 1100 - ENGL 1120 (or ENGL 1107 - ENGL 1127) at Auburn and earn a grade of C or better in each.

Transfer students who have earned a grade of C or better in English Composition I, and earned three semester hours or five quarter hours at another institution will be required to take ENGL 1120 (or ENGL 1127) at Auburn. Students may also fulfill the requirement for ENGL 1120 (or ENGL 1127) by taking an English Composition II course at another institution, provided the course is similar in scope and coverage to ENGL 1120 (or ENGL 1127) and they earn a grade of C or better.

Transfer students who began collegiate study at another institution between fall 1991 and spring 1998 must meet the same composition requirement as students who began college at Auburn during the same period. They may meet the requirement by transferring a writing course taken at another institution, provided this course is comparable in scope and coverage to English Composition I as offered at Auburn during this period, or by taking ENGL 1100 (or ENGL 1107) at Auburn University.

Transfer students who have been exempted on the basis of standardized test scores from English Composition I carrying five quarter hours or three semester hours at another institution, and who have earned a grade of C or better in a subsequent English composition course at the same institution carrying the same amount of credit, will have fulfilled Auburn's composition requirement. Transfer students who have been exempted with credit will have both the exemption credit and course credit accepted at Auburn. Transfer students who have been exempted without credit will be given the course credit and, in addition, will be awarded sufficient advanced standing credit to fulfill Auburn's English composition requirement.

Transfer students who have been exempted from English Composition I at another institution but have had no subsequent English composition course there or have not earned a grade of C or better in the subsequent course must still complete Auburn's six semester hour freshman composition requirement. However, if they meet any of Auburn's criteria for exemption from ENGL 1100, they will receive three semester hours of credit for ENGL 1100 at Auburn and will be required to take ENGL 1120 (or ENGL 1127) at Auburn. Additionally, if they meet any of Auburn's criteria for exemption from ENGL 1120, they will receive three semester hours of credit for ENGL 1120.

All transfer students should confer with their major academic advisor concerning the composition requirement as soon as possible after enrolling at Auburn.

Students who enter an undergraduate program at Auburn after receiving a bachelor's degree from an accredited institution are exempt from meeting the composition requirement.

All students may be eligible to exempt ENGL 1100 and/or ENGL 1120 with credit on the basis of their score in one of the following standardized tests: the English portion of the ACT; the verbal portion of the SAT; the International Baccalaureate English A1 exam; or the CEEB Advanced Placement Exam in English. Note that CLEP test scores are not eligible for exemption. The exemption scores for each test are reviewed each year and are available in the Auburn University Advanced Placement Program, which is distributed by the Office of the Registrar (http://www.auburn.edu/administration/registrar/helpful_resources/enrollment/ap-ib-clep-information.html).

Literature Requirements

Students beginning college work in Fall 2011 or after must take at least one Core literature course. They may take a second course in the same literature to complete a sequence. Completion of the freshman composition requirement is a pre-requisite for all the literature courses.

All Auburn students beginning college work before Fall 2011 must fulfill the Core Curriculum literature requirements by taking one of three sequences:

ENGL 2200/2207	World Literature before 1600
ENGL 2210/2217	World Literature after 1600
ENGL 2230 & ENGL 2240	British Literature before 1789 and British Literature after 1789
ENGL 2250 & ENGL 2260	American Literature before 1865 and American Literature after 1865

Literature courses taken at other institutions may fulfill the Core literature requirement with the following provisions:

1. Students may transfer as equivalents of the three sequences for Core Curriculum credit only sophomore-level literature survey courses covering a broad historical period.
2. Students transferring a single literature course may receive credit for ENGL 2200 only if it is the first course in a World Literature sequence and includes literature of the ancient world. Any survey of modern literature (beginning at any time after 1600 and extending to the present), whether world literature or a national literature, will transfer as credit for ENGL 2210.
3. Freshman literature courses and literature courses based on genres (poetry, the short story, the novel), themes, or narrowly defined historical periods will not fulfill the Core literature requirements but are eligible for transfer as electives.

Students or advisors with special questions about placement or credit for the Core literature requirements may call the Coordinator of Core Literature at (334) 844-4620.

History Requirements

One of the purposes of the university's Core Curriculum is to give students an understanding of their culture and its backgrounds. Course sequences designed especially for this purpose are those in World History and Technology and Civilization. Native students beginning college work before Fall 2011 must earn six hours of credit in one of these sequences. Students beginning college work in Fall 2011 or after must have at least one Core history course and a complete Core sequence in either literature or history.

Credit in history earned at another institution may be allowed on transfer as shown below in meeting this particular requirement.

1. If transfer students have three hours in the first course of a broad, introductory two-course sequence in world history or western civilization or technology and civilization or U.S. history they must complete a history sequence, by taking HIST 1020/HIST 1027 (for world history and western civilization), HIST 1220/HIST 1227 (for tech. and civ.) or HIST 2020 (for U.S. history). A transfer student who has taken the last course in a similar two-course sequence would take HIST 1010/HIST 1017 or HIST 1210/HIST 1217 or HIST 2010/HIST 2017 to complete a sequence.
2. Students entering an undergraduate program at Auburn, after earning bachelors' degrees from other accredited universities, may be exempted from the history requirements unless their curricula specify otherwise.

Dean's List and Graduation Honors

Dean's List

The name of every eligible student who meets certain scholastic requirements for a given semester is placed on a list prepared for the dean of the student's college or school. This honor is also noted in the student's permanent record.

To meet Auburn University's requirements for inclusion on the dean's list, the student must be enrolled for 12 credit hours exclusive of any S-U option courses, pass all courses attempted for the semester, have no D or D* grades that term, and earn a GPA of at least 3.75 (on the 4.00 system). All grades, including those excluded by the grade adjustment/course repeat policy, are used for determining academic honors. The special requirements, applied in addition to the university regulations, are listed as follows:

- College of Architecture, Design and Construction: 3.75 average; only if an S-U graded course is required in the student's curriculum may it be included in the 12-hour minimum total.
- School of Nursing: 3.75 average, only if S-U graded courses are required in the student's curriculum may they be included in the 12 hour minimum total if and only an S grade is earned in these courses.

Graduation Honors

Undergraduate students with a minimum overall grade average of 3.40 are graduated Cum Laude; a 3.60 Magna Cum Laude; and a 3.80 Summa Cum Laude. This distinction of high academic achievement is placed on the student's diploma and on his or her permanent record.

The grade average for graduation honors must be achieved on Auburn University course work. At least 60 hours in residence at Auburn University are required for graduation honors. All grades, including those excluded by the grade adjustment/course repeat policy, are used for determining academic honors. Grades of S or U and non-credit courses are not used in the calculations. Students earning a second baccalaureate degree must earn the minimum overall grade average required for honor distinction on the additional hours completed for the second degree. Those additional hours must total at least 60 credit hours.

Students meeting all of the requirements of the Auburn University Honors College graduate as University Honors Scholars.

Enrollment

Registration and Scheduling

Every student who makes use of the instructional staff and facilities of the university must register and pay fees. This rule also applies to students who are clearing incomplete grades, clearing for graduation, or working on graduate theses. The university calendar (p. 24) lists the dates for registration and late registration/schedule adjustment. Students are urged, and depending on the curriculum may be required, to seek guidance from their advisers before attempting to register for classes, and they are urged to register during their assigned registration period. Students should register for courses during the term preceding the term they plan to attend. **When registering, the student is responsible for observing the pre-requisites or co-requisites of courses.** Any waiver of these requirements must be approved by the department head or, in some cases, the dean. Waiver of the junior standing pre-requisite for courses that may be taken for graduate credit must have the Graduate School dean's approval. The dean may reduce a student's

class load. **Students may register for classes via the web through the 5th university class day in Spring and Fall semesters, and through the 1st university class day during Summer term. Students may register for classes after the close of student web registration only with the approval of the college, school or department offering the course. No student without a course schedule will be allowed to register after the 15th day of classes during Fall or Spring or after the 5th day of classes in any Summer term without the approval of the provost.**

Permission To Register

All students must have a username and a password prior to participating in registration, late registration or schedule adjustment. All registration holds must be cleared prior to the start of registration to avoid delays in registration.

Undergraduate Transient Students

An Auburn student in good standing may be approved to take courses at another institution on a transient basis for one term. In order to do so, you must first fill out the transient form online.

- To access the online transient form you will need to first log into Tigeri.
- Choose "Student Main Menu."
- From the available options, choose "Transient Enrollment for Auburn Students at Other Institutions."
- Read the Transient Enrollment Guidelines carefully. The online form may not be appropriate for every situation.
- Choose the term, state, and institution you wish to take courses as a transient student, and click the Search button.
- When the correct courses are listed, click "Proceed to Transient Form" to produce and print the form. *If you have issues printing, you may need to try a different browser or adjust your print settings.
- Mail or hand deliver the form to the institution you plan to attend.

Credit will only be accepted from regionally accredited institutions where there are reasonable course equivalencies. It is the responsibility of the student to determine the accreditation status of any institution where they intend to take courses as a transient student.

Students will be given transfer credit for those approved courses listed on the Transient Form provided a grade of D or better is earned (with the exception of courses which require a C or better such as English Composition).

Students may not take courses for transfer credit taken at another institution while on suspension or dismissal from AU. Additionally, students may not enroll in courses at another institution for which they have not met the AU prerequisites if the intent is to transfer these courses back to AU. Students can not receive transfer credit from another institution for an AU course where the Grade Adjustment Policy has been applied.

Classification

Year	Completed Hours
Sophomore	completed 30 hours and is in the 31st to 60th credit hour
Junior	completed 60 hours and is in the 61st to 90th credit hour
Senior	completed 90 hours and is in the 91st hour or higher

The codes for identifying the classification of students are as follows: FR, Freshman; SO, Sophomore; JR, Junior; SR, Senior; 5YR, fifth year; UND, undergraduate non-degree students; UPR, undergraduate provisional; MST, master's; EDS, educational specialist; EDD, doctor of education; PHD, doctor of philosophy; GPR, graduate provisional; GND, graduate non-degree; P1, first-year professional; P2, second-year professional; P3, third-year professional; and P4, fourth-year professional.

A student with a baccalaureate degree who undertakes a program for a second bachelor's degree will be classified as an undergraduate.

Course Load

Undergraduate students are encouraged to complete approximately 15 hours each semester to stay on track to complete their degrees. The maximum load for students in undergraduate curricula is 18 hours during the semester, 7 semester hours during the 5-week session, and 14 hours during the 10-week session or any combination of summer sessions. International Students and Scholars are required to be enrolled as full-time students during the academic year and are subject to special full-time enrollment regulations. They may NOT drop below the full-time course loads without prior written authorization from the Office of International Programs. Dropping below full course loads without prior OIP approval can subject international students to USDHS termination of their immigration

status; therefore, international students and academic advisors must check with OIP PRIOR TO modifying full-time course loads for international students. An undergraduate must enroll for 12 or more hours during a semester or summer term to be considered full-time for athletic, financial aid, loan and insurance purposes.

The maximum load may be exceeded under the following circumstances:

On approval of the dean, students may schedule overloads not to exceed 22 hours during the semester or 17 hours during the summer terms or 9 hours during a 5-week session. To be eligible for an overload, students must have passed all work attempted and earned a GPA of 2.5 or higher during their last residence semester at Auburn University in which they carried 15 or more hours (10 or more in their last summer).

Students who have scheduled fewer than 15 hours during an intervening semester (or semesters) will retain the overload privilege if all work carried was passed with a minimum GPA of 2.5 in each intervening term. In special cases the dean may make exceptions to the 2.5 requirement, by electronic notice to the Office of the Registrar.

Students who register for course work in excess of the approved load may be required by the dean to drop the overload during the Schedule Adjustment period. See course load requirements in the Graduate School.

Grade Adjustment

All regularly admitted undergraduate students, who were enrolled during fall 2000 or after, may delete a maximum of three (3) course grades of D or F (including FA or U) associated with their undergraduate degree program from the computation of their cumulative GPA. Deletion of grades from the computation of the cumulative GPA is not available to professional students in audiology, pharmacy and veterinary medicine. Grades and credit considered as transfer credit, courses earned in a previously awarded baccalaureate degree, or grades that have been assigned as a result of academic misconduct are excluded from this policy.

This policy does not offer exemption from academic requirements for Auburn University degrees; adjustment only applies to grades in individual courses. **All core and major requirements must be met for graduation. Students should be aware that D or F/FA/ U grades in required courses may be deleted from the computation of the cumulative GPA prior to a repeat, but the required course must be repeated at Auburn University before graduation.** Where a specific course is required for the core or a major, that course must be repeated to replace the deleted grade. Courses covered by this policy and needed to meet core area requirements or elective courses within a major may, subject to the approval of the academic dean, be replaced by any course accepted for that requirement, where applicable.

All courses for which a grade is awarded at Auburn University will remain on the transcript. Students may submit a written request for grade deletion to their academic dean's office at any time prior to graduation. Once a request for deletion of a grade has been granted and that grade has been removed from the calculation of the cumulative GPA, the grade and credit cannot be restored.

Students should follow guidelines for the repeat of courses in which grades of A, B, or C have been awarded (See the following section on Other Policies on Repeat of Courses). However, all grades will be used for determining all academic honors.

All Auburn University transcripts will include two GPAs: a semester GPA, and a cumulative GPA. The transcript will carry an appropriate notation that the cumulative GPA may not include grades for all courses attempted.

Grades

Grade Definitions

Final passing grades are A, superior; B, good; C, acceptable; D, passing; and S, satisfactory. Final failing grades are F, failure; FA, failure for excessive absences; U, unsatisfactory; NR, no grade reported; and WF, officially dropped with permission of the student's dean but failing at time of withdrawal and is calculated into the GPA. (For the definition of W, see the following section on Grade Assignment for Class Withdrawal.)

A TD, thesis and dissertation research credit, is assigned to courses 7990 Research and Thesis and 8990 Research and Dissertation.

A grade of IP (In Progress) is used by professional programs, specifically Pharmacy and Veterinary Medicine, for those courses that extend beyond the end of the regular term. Students who are making progress toward completion of their work but have not completed all course requirements may receive the IP grade. The IP grade is not calculated in the GPA until the grade is cleared.

Grades of SA and SN may be assigned in certain specialized classes in which progress to the next level of a program depends on performance in the class. In such cases, a grade of SA in a particular course may be required for advancement. A grade of SN will give the student appropriate earned credit, but will not allow the student to advance in that program.

An NR is assigned systematically when the instructor does not assign a letter grade.

Faculty Policy on Assigning Grades of Incomplete (excludes Distance Education courses)

Effective Fall 2007, student (or appropriate representative) must contact the instructor in writing prior to the submission of final course grades to request a grade of Incomplete due to documented reason (illness/death in family/etc.).

If a student does not request an IN, the instructor should grade the student based upon the percentage of course work completed to date and using a 0 for any exams/ assignments not completed.

To be eligible for a grade of IN, the student must have completed (and have passed) more than half of all class assignments for the semester or summer term.

The instructor must fill out the Incomplete Grade - Memorandum of Understanding form, indicating:

- reason for the IN,
- percent of course work currently completed at the time of submission and the grade average on that work,
- detailed information about the additional work needed to complete the course,
- timeline to complete the work (6 months maximum; preferably sooner), and
- grade the student should be assigned if the additional work is NOT completed by the deadline set for the completion of the work; the missing work is calculated as a 0.

Grades of Incomplete automatically become the grade identified by the instructor, if not cleared within 6 months.

If the instructor assigning a grade of IN leaves Auburn University, the Department Head should make a reasonable attempt to contact the former instructor and then assign a grade based upon the work presented by the student and the information provided on the Incomplete Grade - Memorandum of Understanding form.

Once an IN has been changed to another grade it may not be changed, in the future, to a different grade without approval of the provost.

Documentation of class work must be maintained by the student; the Incomplete Grade-Memorandum of Understanding form must be maintained by the student, faculty and the Office of the Registrar. For instructors who submit the IN Grade forms to the Office of the Registrar prior to course grades being rolled to academic history, the IN will be reflected on the electronic grade roster; faculty will be unable to change that grade on the electronic grade roster.

Instructors should NOT enter a grade on the electronic course roster for those students who are to be assigned the IN grade but leave the grade blank. The system will automatically convert blanks to NR. Once the IN Grade form is received by the Office of the Registrar, that office will convert the NR to the IN grade.

It is the responsibility of the instructor to send a copy of the Incomplete Grade - Memorandum of Understanding form to the Office of the Registrar.

When the student has completed the outstanding work, it is the responsibility of the instructor to initiate the change of grade form and send it to the appropriate department/dean's office for additional signatures and transmittal to the Office of the Registrar.

These policies apply to all students in undergraduate and graduate courses.

Faculty Policy on Grade Changes (includes NR; Excludes IN)

Grades should be accurate when posted.

- Any change of letter grades (A, B, C, D, F, S, U, FA, and NR) should be made only in extraordinary situations.
- Any grade changes must be completed within 6 months of completion of the course.
- Any grade changes outside of this timeframe must also be approved by the provost.
- A final grade may be changed only by the written request of the instructor, with approval of the department head and dean, submitted to the registrar.

- A grade of F and additional penalties may be assigned for academic dishonesty. See the Student Academic Honesty Code section in the Tiger Cub for further information.

Grade Assignment For Class Withdrawals

A student who withdraws from a course prior to the 15th class day during a semester (or the fifth class day of summer term) will have no grade assignment; however, from the 15th class day during a semester (or the fifth class day of summer term) through mid-semester (mid-term) a W (Withdrawn Passing) grade will be recorded for the course. A course may be dropped with a W after mid-semester only under unusual conditions and only with permission from the student's dean. When approval for dropping the course under such circumstances is granted, a W may be assigned only when the instructor indicates that the student is clearly passing the course. Otherwise, a grade of WF (Withdrawn Failing) is assigned. All failing grades are calculated into GPA as grades of F.

Grade Average and Quality Point Computation

A 4.0 grade scale is used. An A equals 4.0; B, 3.0; C, 2.0; D, 1.0; and F equals 0.0. Only course work attempted at Auburn University is used in determining the grade report average and continuation-in-residence requirements. S and U grades do not enter into grade-point computations.

S-U Grading

Grades of S (Satisfactory) and U (Unsatisfactory) may be assigned only to courses approved to be graded S-U, and courses elected under the S-U option.

A junior or senior with a minimum overall grade average of 2.5 on at least 20 hours of credit earned at Auburn may elect any course to be graded on the S-U option, except for courses required in the Core Curriculum or for required courses as defined by the student's curriculum. A total of 12 credits may be earned at the rate of one course per term. Students will receive credit toward a degree for these courses, provided credit is normally accepted in their curricula for these courses.

An unclassified student may schedule one or more courses on the S-U option with the approval of the dean. Courses completed on the S-U choice by unclassified students may not be applied later to degree requirements should the student become a degree candidate.

A graduate student may enroll in undergraduate courses, except for 6000-level courses taken for graduate credit, under the S-U option on the major professor's recommendation.

Students are not permitted to change from S-U grading to conventional grading or vice versa after the fifteenth class day of the fall and spring terms or the fifth class day of any summer term.

Grade Reports

Grade information may be obtained via tigeri at the Auburn University homepage, www.auburn.edu.

Undergraduate Continuation in Residence Requirements

Auburn University may place an undergraduate student on academic warning or suspension at any time if the student flagrantly neglects academic work or fails to make satisfactory progress toward graduation.

An academically suspended student who has incomplete or other deferred grades which could, when cleared, remove the suspension will be permitted to register conditionally for the next semester. The suspension must be removed within three weeks of the beginning of the semester (one week for summer sessions); otherwise the Office of the Registrar will resign the student.

No credit earned at another institution by a student on academic suspension from Auburn will be used in clearing a suspension or in meeting requirements for an Auburn University degree.

A student who resigns after mid-term may be subject to academic suspension. (See Resignation for further information.)

Academic Warning

Academic Warning status is imposed at the end of any term for which the student's cumulative GPA on Auburn course work is below 2.0.

Academic Suspension

Any student who is on Academic Warning status will be placed on Academic Suspension if both of the following conditions apply: (1) the term GPA is below 2.2 and (2) the cumulative GPA on Auburn course work is below that required for the designated number of hours earned as follows:

Hourse Earned	Required Minimum Auburn Cumulative GPA
0-30.999	1.50
31-60.999	1.80
61-90.999	1.90
91 or more	1.97

All students, whether beginning freshmen or transfers, are not subject to suspension until they have received one semester warning.

Terms of Suspension

A student who incurs a First Academic Suspension may not enroll in the university for a minimum of one semester. Summer term does not count as a semester for terms of suspension. A student may not take coursework at Auburn University or at another institution of higher education during the period of suspension and apply the credit to an Auburn University degree. A student returning from academic suspension will be on Academic Warning status. A student who incurs a Second Academic Suspension may not enroll in the university for a minimum of two semesters. A student who has incurred two academic suspensions will be placed on Last Warning. A student on Last Warning who does not achieve at least a 2.2 in the current academic term or reach the overall GPA target listed above will be dismissed from the University. A student on suspension may not take coursework at Auburn University or any other institution of higher education, either during summer term or during the other semesters of suspension, and apply the credit to an Auburn University degree. Under some extraordinary circumstances, a student who has been dismissed from Auburn University may be readmitted at a future date. In these cases, no coursework taken elsewhere during the period of dismissal can be applied toward an Auburn University degree.

Suspension for Resigning Students

The academic dean will review all grades for the semester in which a student who is on Academic Warning resigns after mid-semester (or term). If the student's GPA in that term's course work results in the student's cumulative GPA being below the minimum cumulative GPA required, the student will incur Academic Suspension.

James Harrison School of Pharmacy

A student enrolled in the James Harrison School of Pharmacy who is placed on academic suspension and who wishes to re-enter the school must, in addition to complying with other university readmission requirements, be approved for readmission by the Pharmacy Admissions Committee and, when applicable, by the university's Admissions Committee.

College of Veterinary Medicine

Any student who earns less than a 2.25 GPA for any term will be placed on academic probation. A student who fails to earn a 2.25 GPA for any two terms in the same academic or calendar year may be dropped from the College of Veterinary Medicine for scholastic deficiency. In addition, a student who does not have an overall average of 2.25 for an academic year or who does not have a veterinary overall average of 2.25 for an academic year or who does not have a veterinary school cumulative average of 2.25 at the end of any academic year may be required to withdraw from the College of Veterinary Medicine.

A student who makes a grade of F in any course may be dropped from the College of Veterinary Medicine until such time as the course is offered again. Such students may be required to repeat certain other courses in the curriculum for the term in which a grade of F was earned.

Students who are dropped under the above provisions are eligible for admission to other curricula provided they meet the general scholastic requirements for continuance in the university. Scholastic penalties incurred during enrollment in the College of Veterinary Medicine will become part of the student's record.

Policies and Procedures for Admissions

Policies and Procedures for Admissions

Auburn University, is an equal-opportunity educational institution, and as a matter of policy, does not discriminate in its admissions policy on the basis of race, color, sex, religion, disability, sexual orientation, age or national origin. Preference is given to the admission of Alabama residents at the undergraduate level; in considering applications to professional schools or programs with restrictive admissions policies, the length of residency in the state will be a factor.

Applications for resident and non-resident students are accepted for all curricula; however, the number of students and academic credentials of the applicants accepted for admission are determined by the availability of facilities and faculty.

Application Forms

Applicants are required to submit their application electronically by using the document available on the Auburn University website at www.auburn.edu/apply. Application to the Graduate School, the College of Veterinary Medicine, or the James Harrison School of Pharmacy must be made to those schools.

Process for Application

All individuals except incoming freshmen may apply for entrance to any term of a calendar year as early as June 1 of the preceding year. Applications from incoming freshmen are accepted, beginning August 1. Applicants to Veterinary Medicine and Pharmacy will be admitted in the fall semester only. Because of the large number of applications, credentials should be submitted as early as possible. In all cases, complete credentials along with the medical examination report must be filed at least three weeks before the term's opening.

The university reserves the right to establish earlier deadlines should circumstances warrant. Prospective students who are offered admission to the university must maintain a level of academic achievement comparable to that in the record used for admission evaluation. Otherwise, the university reserves the right to rescind the offer of admission.

Application Fee

A \$50 processing fee (international application processing fee is \$60), payable by check, money order or credit card, must accompany all admission applications and is neither refundable nor applicable to other fees. Responses on the application forms and on related materials must be complete and accurate; entrance may be denied or registration canceled as a result of false or misleading statements.

Applicants may receive provisional acceptance after they submit the application form and current academic documents. However, they must complete and return a medical examination report form provided by the university by the first day of classes of the first term. The university may require additional medical examinations, and it may refuse admission to individuals whose health records indicate that their health or the university community might be adversely affected by their attendance. All applicants must certify that they have registered with the Selective Service Board or that they are not required by law to register.

Applicants may be asked to supply evidence of good character. The university may deny admission to those whose presence is deemed detrimental to the institution or its students.

Admission of Freshmen: Academic Criteria

Favorable consideration for admission will be given to accredited secondary school graduates whose college standardized test scores, high school grades, and other factors, give promise of the greatest level of success in college courses.

Secondary school students planning to apply for admission to AU should emphasize the following high school courses: english, mathematics, social studies, sciences and foreign languages.

High School Curriculum Requirements

Course	# of Years
English	4 years
Mathematics	3 years
Algebra I and Algebra II	2 years
Geometry, Trigonometry, Calculus or Analysis	1 year
Science	2 years
Biology	1 year
Physical Science	1 year
Social Studies	3 years

Recommended: one additional science, one additional social studies and one foreign language.

Applicants are required to present scores from either the American College Test (ACT) or the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board. Scores must be received from the testing agency directly not on the high school transcript. Students will also be required to submit test scores on the Writing Test section of the ACT or the Essay section of the SAT. Scores on these tests may be used as a partial basis for admission, for placement in English, chemistry, and mathematics and for awarding university scholarships and loans. The writing score is not utilized in awarding scholarships and loans. Applicants whose native language is not English are required to demonstrate proficiency in English.

Applicants of mature age who are not high school graduates may be considered for admission if their educational attainments are shown through testing to be equivalent to those of a high school graduate. The tests used include the USAFI General Educational Development Test, the American College Test and/or other tests recommended by the Admissions Committee. The Committee will consider applicants from non-accredited high schools on an individual basis.

For further admission information, prospective students may contact: Office of Enrollment Services, The Quad Center, Auburn, AL 36849, admissions@auburn.edu

Early Admission and Joint Enrollment

Early admission is for students who have met all the high school graduation requirements, have graduated early (typically following eleventh grade or mid-senior year), received a high school diploma, and wish to begin their college career early. The Early Admission application is the only *paper admission application submitted to AU, as early admission students are unable to apply online.*

Joint enrollment is for students who are seeking joint (simultaneous) enrollment at Auburn University and their high school. These students will have completed their junior year in high school and wish to take college courses while still enrolled in and attending high school. If attending Auburn University as a joint enrolled student, the student must also submit a regular freshmen admission application following completion of their junior year of high school, in addition to the joint enrollment admission application.

Basic requirements for both early admission and joint enrollment include:

- Superior competence and preparation, evidenced by the high school record and college aptitude test scores (ACT, SAT or other tests prescribed by the University Admissions Committee).
- A letter from the high school principal assessing the applicant's emotional and social maturity and readiness for college work.
- A letter of support from a parent or guardian.
- A letter from the student requesting early admission, including the circumstances for early admission.
- Proper personal qualifications.

Advanced Standing and Credit

Prospective students are advised to check the website of the Office of the Registrar for specific information on placement and credit at www.auburn.edu/administration/registrar/.

Entering students with superior preparation or with special competence in a specific area may qualify for advanced placement or credit. Placement or credit may be granted on the basis of Advanced Placement Examinations of the College Board, International Baccalaureate scores, scores on college ability or achievement tests, departmental proficiency examinations, and other evidences of experience and competence.

Students enrolled at Auburn may apply to an academic department for a Departmental Proficiency Test if they have demonstrated a reasonable basis of experience or study in the subject area. If they score a satisfactory grade on the examination, they will be eligible for placement in an advanced course and for credit in the subject. Students who have previously enrolled for the subject at Auburn are not eligible for this test in the same subject.

The amount of advanced placement credit granted in each subject area is determined by the recommendation of the academic teaching department with the approval of the student's academic dean and the provost or designee.

Students transferring to Auburn who have received advanced placement credits from another institution may be awarded these credits insofar as Auburn's requirements for awarding such credits are met. Advanced placement credits may not be substituted for residency requirement.

Confirmation Deposit

All freshmen and transfer applicants who meet the university admission requirements and are offered provisional admission are required to pay a \$200 non-refundable deposit to confirm the offer of admission. Deposits for the summer and/or fall semesters are due by May 1, and deposits for spring semester are due November 1. However, it is suggested students deposit as early as possible. Students will receive housing information and orientation registration materials following submission of the deposit.

Admission of Transfer Students and Transfer Credit

Transfer applicants must provide official transcripts (not duplicated or faxed copies) from each college attended, including any at which the applicant enrolled while in high school. A minimum 2.5 cumulative GPA on a 4.0 scale on all college work attempted and eligibility to re-enter the institution last attended are required to be considered for transfer admission. Transfer applicants who were not

eligible for admission to Auburn when they graduated from high school must present a minimum of 45 quarter hours or 30 semester hours of college credit. All transfer students who have attempted 45 quarter hours or 30 semester hours of college work must have earned a cumulative 2.5 GPA in at least 30 quarter hours, or 20 semester hours, of standard academic courses as required in Auburn University's Core Curriculum, in addition to the overall 2.5 cumulative average. These 30 quarter hours, or 20 semester hours, must include at least one course in each of the following areas: English (college-level composition or literature), History, Mathematics - approved core mathematics for articulation and general studies (or its equivalent from other institutions) and Natural Science with a laboratory. Admission of transfer students to the university is contingent on availability of space.

Transfer applicants (from both on and off campus) to Architecture, Interior Architecture and Building Science in the College of Architecture, Design and Construction must meet all university requirements and must have a minimum 2.80 cumulative GPA.

The Department of Consumer Affairs limits admission of transfer students to the Interior Design (INDS) curriculum, based on space available. Students from both on- and off-campus who wish to transfer into INDS must submit a Statement of Intent, resume and transcripts from all schools attended. Both on- and off-campus transfer applicants must have a minimum cumulative GPA of 2.5 (on a 4.0 scale) on all collegiate work attempted. The applicant's GPA, Statement of Intent, related courses and work experience are criteria which will determine admission status. Applicants for the INDS program are admitted only in the fall term.

Entrance examinations may be required of applicants transferring from colleges with which the university has had little or no experience.

Transfer Credit

For students transferring from accredited public institutions within the state of Alabama, the amount of credit for freshman and sophomore course work is governed by the Articulation and General Studies agreement. Credit for Core Curriculum English writing courses is allowed only on grades of C or better, as approved by the Discipline Committee of the Articulation and General Studies Agreement. Courses with grades of D are only acceptable for transfer in those degree programs in which grades of D are acceptable for equivalent freshman and sophomore courses taken at Auburn University. The maximum credit allowed for work completed in a junior college will be equivalent to one-half of the student's curriculum at Auburn but not to exceed 96 quarter hours or 64 semester hours.

For students transferring from other accredited institutions, the amount of transfer credit and advanced standing allowed will be determined by the appropriate dean and the provost or designee. Courses with grades of D are only acceptable for transfer in those degree programs in which grades of D are acceptable for equivalent courses taken at Auburn University.

Students transferring from unaccredited institutions or programs may be granted provisional credit. When such credit is allowed, the final amount of credit will be determined upon completion by the student of one year of course work at Auburn University. If a C average is not achieved, the amount of credit will be reduced in proportion to the number of hours in which the student fails to earn a C average or better.

All courses offered at Auburn University are eligible to be transferred to other bachelor's degree-granting colleges and universities, in accordance with the specific policies of those institutions.

For further admission information, prospective students may contact: Office of Enrollment Services, The Quad Center, Auburn, AL 36849, admissions@auburn.edu

Transferring from Auburn University Montgomery (AUM)

Undergraduates enrolled at either of Auburn's campuses may take classes at either campus, if they are in good standing, and approved by the home campus, and have that credit count toward their graduation requirements. This policy does not supersede departmental requirements related to the minimum number of credits to be earned in the major at the home campus. During such terms when students take classes at the other campus, they are classified as transient students. Students must complete an admission application as a transient student; however, the application fee will be waived. To become a degree-seeking student on either campus, however, students must meet minimum transfer requirements.

For further admission information, prospective students may contact: Office of Enrollment Services, The Quad Center, Auburn, AL 36849, admissions@auburn.edu

Admission of Undergraduate Transient Students (Non-degree candidates enrolling for one term)

A student in good standing in an accredited college may be admitted to the university as a transient student when faculty and facilities are available. Generally, space availability is limited for the fall semester.

To be eligible for consideration, an applicant must submit an application, an acceptable medical report and a letter of good standing bearing the signature of the dean or registrar of the college in which the applicant is currently enrolled.

Permission to enroll is granted for one term only; a transient student who wishes to re-enroll must submit a new application. Transient status does not constitute admission or matriculation as a degree candidate. The transient is, however, subject to the same fees and regulations as a regular student except for the continuation-in-residence requirements.

Admission of Unclassified Students

Admission to most undergraduate programs as an Unclassified Student may be granted on the basis of the bachelor's degree from an accredited college. Unclassified students must submit the same admissions credentials as transfer applicants.

For further admission information, prospective students may contact: Office of Enrollment Services, The Quad Center, Auburn, AL 36849. admissions@auburn.edu

Special Admissions

Persons who do not meet general admission requirements for freshmen but who are judged to have potential for success may be approved for special admission. An individual interested in special admission should contact the Office of Enrollment Services.

Admission of International Students

The university welcomes admission inquiries from international students. Because of limited facilities, only those students who have demonstrated academic excellence will be given serious consideration for admission. The international student should be proficient in English. In all cases, English proficiency is determined by satisfactory results on the Test of English as a Foreign Language (TOEFL), offered by the Educational Testing Service, Box 899, Princeton, N.J., 08540, U.S.A. The student must also submit satisfactory results on the Scholastic Aptitude Test (SAT) or the American College Testing exam (ACT).

International students should first send all of their academic credentials to a professional credentials evaluation agency for evaluation. If they appear qualified and show promise of success in their chosen fields of study, they will be asked to make formal application, which must be accompanied by a non-refundable application fee of \$60. If applicants present satisfactory academic credentials, test results, and evidence that they have sufficient funds to meet their college expenses (there is no financial assistance for undergraduate international students), they will then be sent an acceptance and the form I-20, the authorization for a student visa. International students are required to purchase the university student insurance plan or provide evidence of equivalent coverage. This mandatory health insurance may be purchased upon arrival in the U.S.

Detailed information can be found at the: Office of International Education, 228 Foy Hall, Auburn University, Auburn, AL 36849. intledu@auburn.edu

For further admission information, prospective students may contact: Office of Enrollment Services. The Quad Center. Auburn, AL 36849, USA. admissions@auburn.edu

Admission of Auditors

Auditing of courses is restricted, but when faculty and facilities are available, individuals who do not seek admission for course credit may audit a lecture course or the lecture portion of a course upon approval of the dean and the head of the department. A formal application must be filed. Auditors must register and pay appropriate fees. Although listed on class rolls, auditors are not required to take part in classroom discussion, tests, examinations or reports, and they receive no grade or credit. However, students who attend the audited course rarely or not at all will have non-attendance of the course indicated on their records.

A student enrolled in other courses for credit will be granted permission to audit a course only on the approval of the dean and the head of the department of the course involved.

Students may not change from audit to credit after classes begin, but may change from credit to audit within the first four weeks of classes (seven class days during any summer session). No refund of fees will be made except for changes made during the first three weeks of classes in accordance with university policy.

For further admission information, prospective students may contact: Office of Enrollment Services, The Quad Center, Auburn, AL 36849. admissions@auburn.edu

Admission to Graduate Standing

Admission to graduate standing is granted only by the university's Graduate School. A \$50 (\$60 international) application fee is required. A bachelor's degree or equivalent from an accredited college or university is required for Graduate School admission and

submission of satisfactory scores on the General Test of the Graduate Record Examinations (GRE) is required for Graduate School admission in all departments except: Community Mental Health; Industrial Design; Integrated Design and Construction; Landscape Architecture; Nursing; School Counseling; and Real Estate Development. The Physicians MBA and Executive MBA programs do not require any standardized test for admission. The following programs require the Graduate Management Admission Test (GMAT): Accountancy; Aviation and Supply Chain Management; Finance; and MBA. The following programs require the GRE or the GMAT: Hospitality and Management (GMAT preferred).

Readmission

Students who have previously attended Auburn and who wish to re-enter must secure permission to register from the Office of the Registrar if they have not been enrolled at AU during the preceding 12 months or if they have been academically ineligible to be enrolled. Undergraduate students who have not been enrolled at Auburn University for a period of five years or more and who are returning to the same curriculum may be subject to different university, college, school, or departmental requirements than those which existed at the time of their initial entry, as well as those which existed at the program level when continuous enrollment ceased. The university, college, school, or department reserves the right to review a former student's completed work, and if deemed appropriate, may require any readmitted student to meet graduation requirements as listed in the catalog in effect at the time of re-entry. In addition, each college/school may have more specific requirements for readmitted students. A student seeking readmission who has attended another college since being enrolled at Auburn University must (1) be eligible to re-enter the last institution attended and (2) have a 2.0 average overall in course work attempted at other colleges if they have been enrolled elsewhere for two or more terms. An official transcript from each institution attended must be furnished to the Office of the Registrar. Students who have been away from the University for more than one term must re-establish their right to residency. They will initially be classified as a non-resident and be required to produce normal documentation.

Orientation

To help entering freshmen adjust to the first semester at the university, including scheduling of courses, Auburn provides a summer orientation program, Camp War Eagle. Freshmen entering summer or fall semester attend sessions on campus during the summer prior to entrance. In these sessions, students meet faculty members, administrators and student leaders, and plan with their advisors a schedule of their first semester of college work. New transfer students (and freshmen who enter in the January term) should plan to attend one of the regularly scheduled SOS (Successfully Orienting Students) sessions held prior to the beginning of each term. At these programs, new students will have the opportunity to meet with an advisor and plan their schedules for the upcoming term. Other new students may meet with advisors during the regular registration period at the beginning of the term in which they plan to enroll.

Policies on Directed Studies

Credit for Directed Studies

The university policy on directed studies was approved effective August 2006. Auburn University offers directed readings courses, also referred to as special problems courses or independent studies, in accordance with established policy.

Directed readings courses allow in-depth study of a particular subject by a student who is well into her or his major and, in extraordinary circumstances, accommodate scheduling issues when no other remedy is available.

Directed readings courses should not normally be used as replacements for required courses or as a solution to routine scheduling problems.

Eligibility - To be eligible to take a directed readings course a student must be at junior level or above, and the course must be taken for credit toward the student's major or minor; exceptions may be approved as follows:

Exceptions concerning junior standing or higher, or concerning credit toward the student's major or minor, must be approved by the instructor and the offering department head/chair (or dean, if the instructor serves as department head/chair or associate dean), and by the dean of the college in which student is enrolled, if different from the offering college.

A student must have the approval of her/his dean and the provost to take more than 9 hours of directed readings coursework for credit over the course of her/his degree program.

Approval to Teach Course - A standard **Approval for Independent Study/Directed Readings Form**, available through the Office of the Provost website, will specify the necessary approvals and serve as the vehicle for obtaining them.

Policy on Withdrawal and Resignation

Withdrawal refers to the situation where a student drops a class or classes, but remains enrolled in at least one class (at least one credit hour) at the university that term. Resignation refers to the student dropping all classes (0 credit hours) and no longer being enrolled that term.

Withdrawal from a Course. Students may withdraw from a course via the web up through the posted date of mid-semester in spring and fall semester and the posted date of mid-term in the summer. Students who withdraw from a course before the posted term census date (15th class day in spring and fall and 5th class day in summer) will have no grade assignment and no record of having attempted the course on the transcript. Students who withdraw after census and on or before mid-semester in spring or fall or mid-term in the summer will have a grade of W for the course recorded on the transcript. Grades of W are not used in calculating the term or cumulative GPA at Auburn University.

A course may be dropped after mid-semester (or mid-term in the summer) only under unusual conditions and with special permission. Requests for medical withdrawals (serious physical and/or psychological illness of the student) must be verified and approved by the Office of Accessibility. A medical withdrawal is appropriate when, by recommendation of a licensed health care provider, a student cannot continue enrollment in one or more of his/her courses because of a serious physical and/or psychological condition. Because serious health conditions usually impact all courses, most requests for a medical withdrawal result in a medical resignation (see Resignation from all courses.) All other requests for withdrawals after mid-term, based on extraordinary personal circumstances, must be approved by the student's associate dean and subsequently by the designated representative from the Office of the Provost. When approval for dropping the course under such circumstances is granted by the Office of Accessibility or the Office of the Provost, a W may be assigned only when the instructor indicates that the student was clearly passing the course on the date of withdrawal. Otherwise, a grade of WF (Withdrawn Failing) is assigned. Grades of WF are used in calculating the term and cumulative GPA and have the same impact as a grade of F. In extraordinary situations, where it can be clearly demonstrated that a failing grade in the class at the time of withdrawal is directly related to the medical or personal situation leading to the withdrawal, a student may request a withdrawal without grade penalty. The request for withdrawal without grade penalty must be approved first by the instructor, then by the Office of Accessibility in the case of a medical withdrawal or the student's associate dean in the case of a personal withdrawal, and finally by the designated representative from the Office of the Provost.

Resignation from all courses. Students are encouraged to contact their advisors and their academic deans before resigning. Resignations can impact financial aid, veteran's benefits, international student standing, eligibility for varsity athletics, and on-campus housing.

Students may resign without grade penalty if they resign no later than mid-semester (mid-term in the summer). As with course withdrawal, a student may resign after mid-semester (mid-term in the summer) only under unusual circumstances, such as serious illness of the student, serious illness or death of a member of the student's immediate family, or being called to active military service. A medical resignation is appropriate when, by recommendation of a licensed health care provider, a student cannot continue enrollment in his/her courses because of a serious physical and/or psychological illness. All requests for medical resignations (serious physical and/or psychological illness of the student) must be verified and approved by the Office of Accessibility. All other requests for resignations after mid-term, based on extraordinary personal circumstances, must be approved by the student's associate dean and subsequently by the designated representative from the Office of the Provost. The Office of Accessibility or associate dean will obtain from the student's instructors the records of the student's scholastic standing at the time of resignation. In the case of personal resignations after mid-semester, the associate deans will send the information to the designee from the Office of the Provost who will review the request and decide on final approval.

If on the effective date of the resignation after mid-semester (or mid-term in the summer) the student is failing in over half of the total course hours (where total course hours exclude any grades of W previously recorded for the term), the number of hours reported as failing will be assigned grades of WF and will be used in calculation of the student's term and cumulative GPA. The hours reported as passing will be assigned grades of W and will not be counted in the term or cumulative GPA at Auburn University. If the student is passing half or more of the total course hours (excluding any grades of W previously recorded for the term), the student will receive grades of W on all course hours and these grades will not enter into the calculation of the student's Auburn GPA.

When a student is forced to resign after mid-semester, either for medical reasons or for compelling personal reasons, and when the medical condition or extraordinary personal situation can be determined to be the main factor causing scholastic deficiencies, discretionary power in waiving the scholastic penalty will rest with the Office of Accessibility in the case of medical resignations or with the Office of the Provost in the case of personal resignations. All such decisions must include input from the student's instructors.

In all cases of resignation, if a student has been placed on academic suspension at the end of the last term in residence before the term of resignation, the student's dean will review the grades at the time of resignation and determine whether the student will be placed on further academic suspension.

Enrollment in Terms Following a Medical Resignation. Students who plan to enroll in subsequent semesters or summer terms following a medical resignation will be required to submit medical documentation from a licensed health care provider which indicates readiness to return to an academic environment. Additionally, academic units reserve the right to request further documentation and/or other requirements specific to the student's individual program of study. All documentation will be submitted to the Office of Accessibility and is kept confidential. A hold will be placed on the student's registration until this documentation is submitted. If the student has already registered for the following semester, the schedule will be dropped if documentation is not submitted by a specified date and/or the student has not contacted the Office of Accessibility.

Retroactive Dating of Withdrawals and Resignations. Retroactive dating refers to establishing an effective date for withdrawal or resignation before the date that one is filling out the form, often, prior to midterm. For retroactive dating to be allowed, there must be a compelling reason that the forms were unable to be filed at the requested effective date.

Retroactive withdrawals/ resignations are most frequently initiated when a student has documentation from a health professional (doctor/ psychologist, etc.) verifying a medical condition, which is confirmed by the Office of Accessibility, and the medical condition prevented the student from withdrawing or resigning on the effective date.

When a student initiates any retroactive withdrawal/ resignation, the student's associate dean must determine if the retroactive withdrawal/ resignation is based on a medical or non-medical justification/ explanation. If the retroactive withdrawal/ resignation is based upon a medical justification/ explanation, the associate dean will direct the student to the Office of Accessibility. The medical documentation must identify why the student was so impaired that he/she was unable to withdraw/ resign in a timely manner.

If the retroactive withdrawal/ resignation is based upon a non-medical justification/ explanation, the associate dean follows the procedures for all other (non-medical) withdrawals/ resignations, gathering information from the instructors and submitting the documentation to the designee from the Office of the Provost. The Provost's designee will determine why the student was unable to resign in a timely manner and if an earlier effective date is warranted.

If one or more of the student's instructors has left Auburn University, the instructor(s) should be contacted by email, by the individual recommending the retroactive withdrawal/ resignation, for information. If the faculty member does not respond, the department head/ chair should respond on behalf of the faculty member.

Retroactive withdrawals/ resignations should not be undertaken if more than two calendar years have passed since the course(s) was/ were taken, without the direct review and approval of the Provost.

Repeat of Courses

No student may repeat a course for credit in which the student has previously earned a grade of A, B, or C without written permission by the student's academic dean. Courses specifically designated as repeatable in the Auburn University Bulletin are exempt from this regulation. Students may repeat courses in which they earn a grade of D or F. Grades and hours for both attempts will be included in the calculation of the GPA unless the Grade Adjustment Policy (p. 89) has been invoked for the first attempt. If the grade adjustment policy is not invoked in the case of the repeat of a D grade, then the course credit hours may count only once toward graduation unless the course is designated as repeatable.

Satisfactory Progress

Student Athletes

In addition to meeting the general academic requirements of the university, student athletes must meet all academic requirements, including those relating to satisfactory progress toward a degree, set forth in the legislation of the Southeastern Conference (SEC) and of the National Collegiate Athletic Association (NCAA).

Student Financial Aid Recipients

In addition to meeting the general academic requirements of the university, applicants for student financial aid funds must maintain Satisfactory Academic Progress to receive, or to continue to receive, assistance through federal, state and institutional student aid

programs. Descriptions of these Satisfactory Academic Progress requirements for distinct classifications of Auburn students are available from the Office of Student Financial Services.

Veterans

All VA eligibles (Chapters 30, 31, 32, 35 and 106), in addition to meeting the general academic requirements set forth by the university, must maintain satisfactory academic progress as approved by the State Approving Agency of the State of Alabama, Department of Education. Such standards are as follows: Any undergraduate VA eligible must have a 2.0 GPA after the student has earned 120 hours at Auburn University. This would be checked at each term's end and the VA benefits of any VA eligible not meeting this requirement would be terminated. Separate standards of progress apply to graduate students as outlined in the Graduate School section.

Special Academic Opportunities

The Honors College

The Honors College at Auburn University offers a select cohort of high-ability students a unique academic experience designed to provide many of the advantages of a small college in addition to the myriad opportunities available at a large and diverse research university. Students in the Honors College receive a more intensive and innovative education than is available in the regular curriculum. These advantages include small class sizes, specialized advising, and regular exposure to diverse social and co-curricular programs. Honors students have close personal contacts with their teachers and with other students, providing a sense of community and identity within the larger university context.

Eligibility

Entering freshmen as well as currently enrolled students who demonstrate the potential for outstanding academic achievement may apply for admission into the Honors College. Selection of incoming freshmen is based on ACT/SAT scores (29/1290 minimum), high school GPA (3.75 minimum), an application essay and a record of leadership and service. Students enrolled at Auburn who have a 3.4 unadjusted GPA may also be considered for admission.

Curriculum

The Honors Curriculum has two components, the Honors College Courses and the Honors Apogee/Capstone Experience.

The Honors College Courses were developed to provide Honors students an opportunity for broad enriching educational experiences primarily based on Auburn's Core Curriculum. To complete the Honors College course requirements, students are required to:

1. Maintain a minimum unadjusted 3.2 GPA
2. Complete a minimum of 18 Honors hours in the following areas:
 - A. Honors University Core Courses
 - B. Honors Interdisciplinary Symposia
 - C. Honors Departmental Courses
 - D. Honors Contracted Courses
3. Complete a minimum of 4 hours of Honors Participation Courses.

The Honors Apogee/Capstone Experience offers Honors students the choice of completing the Thesis/Project Option or the Seminar Option. The Seminar Option requires the completion of two 3-hour, 3000-level Honors Seminars. The Thesis/Project Option may be intra-disciplinary or interdisciplinary. It may be a traditional Honors thesis or a conference style presentation, a portfolio, a performance, approved service learning project, a project based on a substantial study abroad experience, or an identifiable part of a team (senior design) project. Students selecting the Thesis/Project Option are required to complete 6 hours of Special Problems/Thesis/Project/Undergraduate Research/Contract courses under the direction of a faculty member in the student's major and write a thesis or give a podium presentation. Completing an undergraduate thesis is a significant achievement that is noted by admission committees for graduate and professional schools.

Thesis/Project Option. Honors students must:

1. Maintain an unadjusted 3.2 overall GPA
2. Complete at least 3 hours in the Honors Special Problems/Thesis/Project/Undergraduate Research/Contract course
3. Complete at least 3 hours in the Honors Thesis/Project course.

Seminar Option. Honors students must:

1. Maintain an unadjusted 3.2 overall GPA
2. Complete at least 6 hours in the 3000-level Honors Seminars.

Honors Distinctions

After completing the requirements of the Honors College Curriculum, students graduate with a special designation that is noted on their diploma and transcript.

To graduate as an *Honors Scholar* students must complete the Honors College Course requirements, the requirements for their discipline, and have a minimum cumulative unadjusted GPA of 3.2 – OR – complete the Honors Apogee/Capstone Experience (Thesis/Project Option), a predetermined number of Honors Participation Courses, the requirements for their discipline, and have a minimum cumulative unadjusted GPA of 3.2.

To graduate as a *University Honors Scholar* students must complete all requirements of the Honors College Courses and Honors Apogee/Capstone Experience, the requirements for their discipline, and have a minimum cumulative unadjusted GPA of 3.4.

Cooperative Education (Co-Op) Program

The Cooperative Education (Co-Op) Program provides opportunities for students to alternate semesters of academic study with work experience in industry, business, and government agencies.

Coordination of study and work combines theory and practice. As a result students find increased meaning in and motivation for their studies. This experience helps to develop a sense of responsibility, judgment, and maturity. Students also benefit financially, since they are paid for their work.

In four-year undergraduate curricula, the Cooperative Education Program is a five-year plan. A student must complete at least two semesters of the freshman year with an above-average scholastic record before being placed with an employer. Cooperative Education is offered in all curricula of the College of Agriculture; Architecture, Design and Construction; Business; Engineering; Liberal Arts; Sciences and Mathematics and in all curricula of the School of Forestry and Wildlife Sciences.

A graduate Co-Op Program can be arranged for certain students in the master's and doctoral programs where employers can provide professional experiences which relate directly to the student's specialized field of study.

For additional information, contact: Cooperative Education (Co-Op) Program, 104 Ramsay Hall, Auburn, AL, 36849-5123. Telephone: (334) 844-5410. Website: www.auburn.edu/co-op.

International Academic Opportunities

Access to international opportunities is provided throughout many colleges, schools, departments and other student support units. However there are several units on campus that provide specialized services for English language study, study abroad and international students attending Auburn University.

International Internships, Academic/Curricular Practical Training

Academic internship experience both within the US and abroad are highly encouraged for all disciplines and all AU students. Students interested in participating in such experiences should check with their academic units for specific requirements. For international students practical training is available: UNIV 4920 Curricula Practical Training depending on US immigration status as Curricular Practical Training (F) or Academic Training (J). Students may also do academic internships abroad under Auburn Abroad. For further details on Auburn Abroad or CPT/AT students should check with the Office of International Programs.

English as a Second Language (ESL) Program

The ESL Program operates under the Assistant Provost for International Programs and offers English language instruction to international students and visiting scholars. It provides courses in oral and written proficiency to support international students enrolled in undergraduate and graduate degree programs, a course in classroom communication skills for international graduate teaching assistants, and an Intensive English program involving 25 hours of instruction per week in listening, speaking, reading, writing, grammar, pronunciation, and TOEFL skills. It also operates an International Student English Center that develops international students' and scholars' English skills through tutoring and workshops at no charge. For additional information, contact: 316 Foy Hall, (334) 844-2122; email: raffadc@auburn.edu; or visit www.auburn.edu/esl.

Office of International Programs

The Office of International Programs (OIP) is a unit of the AU Division of Academic Affairs. Its mission is to provide leadership and relevant administrative support to academic units, faculty, students, and staff for the effective promotion and efficient adoption of Auburn University's internationalization goals. The International Students and Scholar Service component of the OIP assists foreign national students, visiting scholars, and university employees in achieving their academic objectives. The Auburn Abroad unit of the OIP promotes and facilitates student and faculty participation in an international education experience through programs outside of the United States. For additional information, contact: Office of International Program, 228 Foy Hall; 334-844-5001; intledu@auburn.edu; or www.auburn.edu/international.

OIP International Student and Scholar Services

The ISSS unit of the OIP provides assistance and guidance to foreign national students, visiting scholars, and University employees regarding US immigration requirements and Auburn policies for studying and/or working at Auburn University. Documentation of eligibility for study in the United States, work authorizations, and other government documents required by international students, scholars, and employees are issued and monitored by the ISSS. Joint orientation programs are conducted in cooperation with the Office of International Student Life and other units of the University to assist students, visitors, and employees adapt to the AU community. Currently, the university has more than 1200 international students, visiting scholars, and employees from over 90 nations. Go to the section on International Student Services for additional information.

OIP Auburn Abroad Experience

The Office of International Programs (OIP) Auburn Abroad unit seeks to develop, expand and facilitate credit bearing study, internship and exchange opportunities outside of the United States. Each year more than 1000 Auburn University students participate in the Auburn Abroad experience. More than 90 percent of these students go on faculty led programs and Exchange Programs with the rest going on other university or provider programs. With some planning, credit earned through the Auburn Abroad experience can be integrated with Auburn University degrees and applied to core, major, minor, and elective courses. Students on Auburn University faculty-led programs and Exchange Programs will earn AU credit and will receive grades on their transcript. Students going on other university programs will earn transient/transfer credit for their courses abroad. If a student chooses to go on other university programs, they will need to be enrolled in an Auburn Abroad placeholder course to be able to use their financial aid.

Auburn Abroad experiences vary considerably in length and are available for all semesters including summer. Each college and school within Auburn University has programs abroad tailored to their students' needs. The Auburn Abroad staff conducts Fall and Spring Study Abroad and Passport Fairs, and over 100 other information sessions each year to inform students about international opportunities. Both undergraduate and graduate students can participate in the Auburn Abroad Experience. Requirements for acceptance into the Auburn Abroad Experience include the following: (1) a minimum institutional cumulative GPA of 2.25 for undergraduates and 3.0 for graduate students, (2) the student must attain the age of 19 prior to the start date of program, (3) the student's record must show no pending Auburn University judicial actions and the student must be in good academic standing in their college or school. Faculty directors for programs abroad may also have additional requirements. Although some programs require prior knowledge of a foreign language, there are many that do not.

Students considering any type of credit bearing experience abroad should start their Auburn Abroad Experience by attending either (1) a weekly, thirty minute general orientation session conducted by the Auburn Abroad Staff or (2) by attending a faculty led program orientation session. The Auburn Abroad Experience sessions are held every semester. Sessions are conducted on Thursdays at 3pm and repeated on Fridays at 11am in the Auburn Abroad conference room, 242 Foy Hall. These sessions include an introduction to the on-line Auburn Abroad application process, hints on searching for faculty led and other types of programs abroad, the credit approval process, transcript information, information on a variety of funding resources, and paperwork needed for scholarship, PACT and other benefit programs. Students interested in faculty led programs must contact the faculty director(s) for the dates of their orientation sessions. After students attend a study abroad orientation session, they are ready to start their on-line study abroad application, found at www.auburn.edu/studyabroad on the Program Search link. They need to complete this on-line application, submit a completed Course Approval Form, and respond to any Auburn Abroad Unit emails requesting additional information. The Course Approval Form requires special attention and students must obtain all required signatures including department chair and dean. The on-line application and requested materials must be completed and submitted by the deadline dates listed on www.auburn.edu/studyabroad to be considered. Current deadline dates are: Summer Programs: March 15; Fall Programs - April 30 and Spring Programs: October 15.

The OIP staff monitors students' on-line applications and will enroll individual students in one of the following Auburn Abroad Full Time Placeholder courses: (UNIV 2940 / UNIV 2945, UNIV 4940 / UNIV 4945, UNIV 5940 / UNIV 5945 or UNIV 7940 / UNIV 7945). These placeholder courses will be listed on the students' transcripts while they are abroad. Once students complete their course work abroad and the Auburn Abroad staff receives and processes their transcript through the registrar, then the actual, approved courses listed on their Course Approval Form will be listed on the students' transcripts as Auburn University Credit. These processes and

dates are subject to change and it is the individual student's responsibility to attend orientation sessions and check the website to insure that they are in compliance. In addition to receiving credit for an abroad experience, students enrolled in Auburn Abroad are provided opportunities to attend pre-departure sessions and will be enrolled in the Auburn University International Travel Assistance plan. Students will receive a FrontierMEDEX enrollment card and material to read concerning the assistance plan, health and safety issues. The Auburn Abroad staff, along with the Department of Safety and Security routinely monitor global situations and will provide assistance to students in distress abroad. Returning students are encouraged to become Global Tiger Peer Advisors when they return, share their "Global Tiger Tale" on the Auburn Abroad website and submit photos from their experience abroad for the annual student photo contest. For additional information please visit the OIP Auburn Abroad Experience Website at www.auburn.edu/studyabroad and/or send an email to: auab@auburn.edu.

Service Learning and Student Engagement

Auburn University has a long history of service to the community as part of its land-grant mission of outreach. The value of public service is also emphasized in the Auburn Creed. Service engagement is one of Auburn's strategic objectives for enhancing students' academic experience, and it is required for many courses of study. Thus, students are expected to engage in organized outreach activities over their academic career at Auburn, through a variety of curricular, co-curricular, and extracurricular services experiences.

Service engagement enhances academic study and provides opportunities for personal and professional growth, while making a difference in the surrounding community. Engagement also builds appreciation for collaboration and cooperation by working with community partners in a service environment. Students may participate in public service activities through formal service-learning courses and internships that have been established in the university curriculum. Many majors require service as a component of disciplinary study. Students can also fulfill their personal service interests through student organizations, volunteerism in campus service projects, or direct engagement with community agencies.

Students can access information on service learning and service opportunities through AUBURNSERVES, an on-line network hosted by the university's engagement office, the Office of Public Service. AUBURNSERVES is a collaboration of campus partners including University Outreach, Access and Community Initiatives, Extension, the Biggio Center, Student Affairs' IMPACT program, Learning Communities, and academic programs in the schools and colleges. AUBURNSERVES offers students and their faculty mentors contact information for a wide range of organized service options available through more than 125 community partners statewide. The network also provides online resources for managing and documenting service projects.

For more information on student engagement and service learning at Auburn University, and to access the AUBURNSERVES network, visit www.auburnserves.com (<http://www.auburnserves.com>), or contact the Office of Public Service at 334-844-5117.

National Honor Societies

The following members of the Association of College Honor Societies have established chapters at Auburn:

Alpha Delta Mu (Social Work), Alpha Epsilon (Biosystems Engineering), Alpha Epsilon Delta (Pre-Medicine), Alpha Kappa Delta (Sociology), Alpha Lambda Delta (Freshman Scholarship), Alpha Phi Sigma (Criminal Justice), Alpha Pi Mu (Industrial Engineering), Alpha Sigma Mu (Metallurgical & Materials Engineering), Beta Alpha Psi (Accounting), Beta Gamma Sigma (Business), Cardinal Key (Junior Leadership), Chi Epsilon (Civil Engineering), Eta Kappa Nu (Electrical and Computer Engineering), Kappa Delta Pi (Education), Iota Delta Sigma (Counselor Education), Lambda Sigma (Sophomore Leadership), Mortar Board (Student Leadership), Omega Chi Epsilon (Chemical Engineering), Omicron Delta Kappa (Student Leadership), Kappa Omicron Nu (Human Sciences), Phi Alpha Theta (History), Phi Beta Kappa (Arts and Sciences), Phi Eta Sigma (Freshman Scholarship), Phi Kappa Phi (Senior Scholarship), Phi Lambda Sigma (Pharmacy Leadership), Phi Sigma Tau (Philosophy), Pi Delta Phi (French), Pi Lambda Sigma (Pre-Law), Pi Sigma Alpha (Political Science), Pi Tau Sigma (Mechanical Engineering), Psi Chi (Psychology), Rho Chi (Pharmacy), Sigma Delta Pi (Spanish), Sigma Gamma Tau (Aerospace Engineering), Sigma Pi Sigma (Physics), Sigma Tau Delta (English), Tau Beta Pi (Engineering), Tau Sigma Delta (Architecture & Allied Arts), Xi Sigma Pi (Forestry).

National Recognition Societies

The following national societies have chapters established at Auburn:

Alpha Epsilon Lambda (Graduate), Alpha Eta Rho (Aviation), Alpha Kappa Psi (Business), Alpha Phi Omega (Service), Alpha Psi Omega (Theatre), Angel Flight (Air Force ROTC Auxiliary), Arnold Air Society (Air Force ROTC), Beta Beta Beta (Biology), Block and Bridle (Animal Husbandry), Delta Nu Alpha (Transportation), Delta Sigma Pi (Commerce & Business Administration), Eta Sigma Delta (Hotel and Restaurant Management), Gamma Sigma Delta (Agriculture), Golden Key National Honor Society, Kappa Kappa Psi (Band), Kappa Omicron Nu (Human Sciences), Kappa Psi (Pharmacy), Lambda Tau (Medical Technology), National Student Speech, Language, Hearing Association (Communication Disorders), Omicron Delta Epsilon (Economics), Omicron Kappa Pi (Architecture), Order of Omega (Greek Leadership), Phi Delta Kappa (Education), Phi Delta Chi (Pharmacy), Phi Lambda Sigma (Pharmacy), Phi

Lambda Upsilon (Chemistry), Phi Mu Alpha (Music), Phi Psi (Textiles), Phi Zeta (Veterinary Medicine), Pi Alpha Xi (Horticulture), Pi Kappa Lambda (Music), Pi Mu Epsilon (Mathematics), Pi Sigma Epsilon (Marketing), Scabbard and Blade (Military), Semper Fidelis (Marine Corps ROTC), Sigma Alpha Iota (Music), Sigma Delta Chi (Journalism), Sigma Gamma Epsilon (Earth Sciences), Sigma Lambda Chi (Building Construction), Sigma Theta Tau (Nursing), Sigma Xi (Scientific Research), Society for Technical Communication (Liberal Arts), Steerage (Navy ROTC), Tau Beta Sigma (Band), Upsilon Pi Epsilon (Computer Science).

Student Records

Confidentiality of Student Records

The university recognizes that the maintenance of student information and educational records is necessary and vital to assist the student's education and development and to provide opportunities for university research and policy formulation. The university recognizes its obligation to exercise discretion in recording and disseminating information about students to ensure that their rights of privacy are maintained.

The university will furnish annual notification to students of their right to inspect and review their educational records; the right to request amendment of educational records considered by them to be inaccurate or misleading or that violate privacy or other rights; and of their right to a hearing should the university decline to amend such records. This annual notice will be published in the *Auburn University Bulletin* and an electronic notification is sent to each active Auburn student.

The following guidelines have been developed to ensure the privacy rights of students. For the purposes of this policy statement a student is defined as an individual who has been admitted and has been in attendance in a component unit of the university. Classification as a student in one component unit of the university (e.g., an undergraduate program) does not imply that the person has been accorded the rights outlined below in other component units (i.e., graduate school, professional schools, branch campus).

Student Access to Records

Auburn University's permanent student education record consists of one or more of the following: the official transcript of grades, competency evaluations, and any narrative evaluations. This is in accordance with guidelines established by the American Association of Collegiate Registrars and Admissions Officers and the State of Alabama policies on Retention of Records.

Students have the right to be provided a list of the type of educational records maintained by the university which are directly related to the student; the right to inspect and review the contents of these records; the right to obtain copies of these records; the right to a response from the university to reasonable requests for explanation and interpretation of these records; the right to an opportunity for a hearing to challenge the content of these records; and if any material or document in the educational record of a student includes information on more than one student, the right to inspect and review only the part of such material or document as relates to the student.

Students do not have access to financial records of their parents; confidential letters and statements of recommendation which were placed in the educational record prior to Jan. 1, 1975, provided such letters or statements were solicited or designated as confidential and are not used for purposes other than those for which they were specifically intended; confidential recommendations, if the student signed a waiver of the right of access, respecting admission, application for employment, and the receipt of an honor or honorary recognition.

Students do not have access to instructional, supervisory or administrative personnel records which are not accessible or revealed to any other individual except a substitute; Campus Security records which are maintained apart from educational records, which are used solely for law enforcement purposes, and which are not disclosed to individuals other than law enforcement officials of the same jurisdiction; employment records except when such employment requires that the person be a student; and the Alumni Office records.

Students do not have access to physical or mental health records created by a physician, psychiatrist, psychologist or other recognized professional acting in his or her capacity or to records created in connection with the treatment of the student under these conditions which are not disclosed to anyone other than individuals providing treatment. A physician or appropriate professional of the student's choice may review these records.

Procedures for Access

The Office of the Registrar has a complete list of educational records maintained by the university which students may obtain. Students should contact the appropriate office to inspect and review their records. An office may require that a university official be present when a student inspects and reviews his or her educational records. Any questions concerning a student's access to records should be directed to the registrar.

Amending Educational Records

Students may request that any information contained in their educational records which they consider to be inaccurate, misleading, or in violation of their privacy or other rights be amended or deleted from the records. (A grade or other academic scores may not be amended, except that the accuracy of recording the information may be challenged.)

Students who request that information in their records be amended should first direct their request to the official with primary responsibility for the information on the record. If the matter is not resolved to their satisfaction, students should direct their requests to the official's dean or division head. If the matter is not resolved to their satisfaction, they may request a formal hearing.

Right to a Formal Hearing and Procedures for Decision

Students may request formal hearings to challenge information contained in their educational records. The hearing will be held in a reasonable time (not to exceed 45 days) and in a reasonable place. Students may be assisted or represented by persons of their choice, including an attorney, at the expense of the student, and shall be afforded a full and fair opportunity to present evidence relevant to the issue(s).

Students or their representative should request the hearing in writing and should specifically identify the information they seek to have amended. The request should be directed to the Office of the Provost/Vice President for Academic Affairs.

The Office of the Provost/Vice President for Academic Affairs will conduct the hearing and render a decision within a reasonable period of time after the conclusion of the hearing and the decision shall be based solely upon the evidence presented at the hearing. The student shall be notified in writing of the reason(s) for the decision and given a summary of the evidence.

If the decision is that the information in the student's educational records is inaccurate, misleading or in violation of his rights and privacy, the statement(s) will be corrected or expunged from the students records.

If the decision is that the information is not inaccurate, misleading, or in violation of the privacy or other rights of the student and that the information or parts thereof are to remain in the student's educational records, the student shall be notified and given the right to enter a statement in the records setting forth any reason for disagreeing with the decision of the Office of the Provost/Vice President for Academic Affairs. This statement shall be maintained in the records as long as the record or contested portion thereof is maintained, and if the contested educational record or contested portion thereof is disclosed by Auburn University to any party, the student's explanation shall also be disclosed to that party.

The Secretary of Education has established a review board to receive complaints regarding violation of student's rights. Students wishing to file a complaint directly to the review board should write to the Family Policy and Regulations Office, Department of Education, Washington, D.C. 20202. Detailed procedures for this complaint procedure are listed under section 99.63 of the regulations issued by the Secretary and will be furnished upon request by the registrar, Auburn University.

This policy is adopted pursuant to the Family Educational Rights and Privacy Act, (34 CFR Part 99), and is not intended to impose any restrictions or grant any rights not specifically required by this Act.

Release of Directory Information

The university may release directory information without the student's written consent. Directory information consists of student's complete name; local address and associated telephone number; place of birth; parent/spouse name, address and associated telephone number; mailing address and associated telephone number; E-mail address; photographs, video or other electronic image; participation in recognized activities and sports; weight and height of members of athletic teams; dates of attendance; enrollment time status (full or part time); degrees and awards received; and most recent previous educational agency or institution attended.

A student may deny the release of directory information by completing an Address Change/Information restriction request form available in the Office of the Registrar, 100 Mary Martin Hall. Students may also restrict directory information on tigeri.

To deny the release of information regarding participation in recognized activities the student must notify the vice president for Student Affairs and the student's academic dean in writing. To deny the release of athletic information, the student must notify the director of Athletics in writing. A former student, one who is not in attendance, must contact the appropriate offices to deny the release of information.

Release of Educational Records

The university will release a student's educational record(s) upon the student's written request. The student must:

1. Specify the records to be disclosed.

2. Include the purpose or purposes of the disclosure.
3. State the party or parties and the address to whom the information is to be disclosed.

The student shall, upon request, receive a copy of the record that is to be disclosed. It is university policy to furnish single copies of a student's record at no charge.

The university may release student's educational records to the following without prior written consent:

1. University officials who have a legitimate educational interest in the records. University officials are defined as teachers, administrative personnel and other employees except personnel of the security or law enforcement unit of Auburn University, and other agents acting on behalf of the university. If university officials are required in the performance of their duties to review the educational records of a student, this will be considered to be a legitimate educational interest. Auburn University has designated the National Student Clearinghouse as a university official.
2. Officials of another school in which the student intends to enroll upon request of the transfer school.
3. Government representatives of the Comptroller General of the United States, the Secretary of Education, the U.S. Commissioner of Education, the Director of the National Institute of Education, the Assistant Secretary for Education, State educational authorities, and State officials to whom such information is specifically required to be reported or disclosed by State law adopted prior to Nov. 19, 1974.
4. Appropriate authorities in connection with financial aid with the understanding that only the necessary records will be released.
5. Organizations conducting studies for, or on behalf of, the university or its agencies for the purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction and student life provided that the studies will not permit the personal identification of students and their parents by individuals other than representatives of the organization and provided that the personally identifiable information furnished will be destroyed when no longer needed for the purposes for which the study was conducted.
6. Accrediting organizations to carry out their accrediting functions.
7. Parents of a dependent student as defined in section 152 of the Internal Revenue Code of 1954. University officials may release educational records to parents on the basis of a written documentation from the parent that the student is a dependent as defined under the Code and there is reasonable notification of the student regarding the request.
8. A court of law to comply with a judicial order or lawfully issued subpoena with the understanding that the student will be notified in advance insofar as possible.
9. Appropriate parties to protect the health and safety of the student or other individuals in emergencies with the understanding that only information essential to the emergency situation will be released, that information will be released only to a party who would be in a position to deal with the emergency, and that the student will be notified insofar as possible of the information released, the purpose for the release, and to whom the information was released.

No personal information on a student will be released without a statement from the university to the party receiving the information that no third party is to have access to such information without the written consent of the student.

Each office with educational records will maintain a record of each request and disclosure of personally identifiable information from the educational records of a student except for information requested in writing by the student, information released to the student or the student's parents, directory information, and information released to university officials and teachers who have a legitimate educational interest in the records. The student may inspect the record of requests, disclosures and the legitimate interests of parties requesting or obtaining information in the appropriate university office.

Academic Services

- Academic Support Services (p. 107)
- The Auburn University Career Center (p. 107)
- The First Year Experience Office (p. 107)
- Undergraduate Studies Academic Counseling and Advising Center (p. 108)
- Veterans Resource Center (p. 108)
- Office of Accessibility (p. 107)

Academic Support Services

Academic Support Services help AU students successfully achieve their academic goals. The Study Partners Program offers free tutoring services to AU students enrolled in selected undergraduate subjects. Supplemental Instruction (SI) provides peer-facilitated academic assistance in specific courses. Individual and group instruction is provided to students experiencing academic difficulty and to those who desire to improve their study skills. Study Smart, a non-credit course, is also available for students in academic jeopardy. For assistance, visit www.auburn.edu/academicsupport, or call (334) 844-5972.

Office of Accessibility

Auburn University is committed to providing its students with an accessible campus and equitable learning environment. If you have a disability that requires reasonable academic accommodations, assistive technology, or support services, contact the Office of Accessibility for additional information, 1228 Haley Center; 334-844-2096 (Voice/TT) or visit our website at <http://accessibility.auburn.edu/>.

The Auburn University Career Center

The Auburn University Career Center provides services and resources to help students choose an appropriate major that aligns with their academic abilities, interests, and skills; develop a personal career plan; learn job search skills and find employment. Career counselors/advisors work with students through the career development process by utilizing interest/personality inventories and career resources to help students learn how to maximize their career options through the development of a tailored career plan. Job search assistance is available to help students learn the skills necessary to plan and implement a successful job search. The Career Center also provides employment information through on-line job postings for full-time, part-time and internship positions; on-campus interviews with potential employers; on-line resume referrals; and career events. For assistance, call (334) 844.4744 or visit the Career Center website at www.auburn.edu/career.

The First Year Experience Office

The First Year Experience Office provides programs to help the new student make the transition into Auburn University life. These programs promote intellectual and social development leading to personal and academic success. For assistance, call (334) 844.4501 or visit the First Year Experience website at www.auburn.edu/fye

Camp War Eagle

Camp War Eagle is Auburn's summer orientation experience for incoming freshmen and their parents. Sessions are held throughout the summer and engage the student and parent in the academic and social transition to college life, including meeting with the student's academic advisor. The student will also register for classes at Camp War Eagle.

Successfully Orientating Students

Successfully Orienting Students (SOS) is a one-day orientation program held for all transfer students and freshmen who do not attend Camp War Eagle during the summer or who enroll in the spring semester. Students will meet with academic advisors as part of their day.

First Year Seminars

First Year Seminar (FYS) courses at Auburn University help new students acclimate to multiple aspects of university life. By taking an FYS course, students can learn about the history and mission of Auburn, academic and personal resources and services, relevant social issues, opportunities for involvement on campus and in the local community, time management, critical thinking skills, study strategies, test preparation, note taking, goal setting, and many other topics and skills vital to college success. Most students in Learning Communities often take an FYS course as a part of their fall semester block of courses, but FYS courses are available to all new students.

Learning Communities

Learning Communities are unique academic opportunities for Auburn freshmen. Each learning community is comprised of twenty-five students who are co-enrolled in several core courses surrounding a particular theme or interest. Students also have the option to live together in the same residence hall. By participating in a learning community, students are involved in an environment that helps

them transition to college through faculty interaction, which promotes student retention and academic success. Students are also exposed to a small community of peers with similar academic interests and a supportive network of fellow students, peer educators, and professors. For assistance call 334.844.5721 or visit the Learning Community website at www.auburn.edu/lc.

Auburn Connects! Common Book Program

Auburn Connects! Auburn University's Common Book program was created to provide incoming freshmen with the common experience of reading the same book along with current students, staff, faculty, and members of the Auburn community. The book is incorporated into freshman convocation, academic classes, and programming through the year including a visit by the book's author. Students are asked to read the book prior to coming to campus in August so that they will get the most out of discussion of the book both in and out of class. For assistance call 334.844.5721 or visit the Auburn Connects! website at www.auburn.edu/auburnconnects.

Undergraduate Studies Academic Counseling and Advising Center

Undergraduate Studies Academic Counseling and Advising Center, housed in Cater Hall, is designed to assist students experiencing difficulty sustaining minimum academic standards for a specific major, identifying a major or career path, or simply adjusting to college life. The staff of the Center is available to provide students with assistance in developing a personalized academic success plan and also provides advising services to students in the Interdisciplinary University Studies major. Typical hours of operation are Monday through Friday, 7:45-11:45 a.m. and 12:45-4:45 p.m. Students interested in seeking assistance from the Academic Counseling and Advising Center should contact their academic advisor and request a referral. Additional information may be obtained by calling 334 844-7277 or visiting our website <https://fp.auburn.edu/CaterCenter/Default.aspx>.

Veterans Resource Center

The Auburn University Veterans Resource Center assists veterans, guardsmen, reservists, active duty, and their military dependents receiving VA educational benefits in making a successful transition into the AU community. The center provides timely and comprehensive support with a range of services for current and former military service members, including eligible military dependents, by collaborating with University Faculty and Staff, state VA representatives, the local veteran community, and civilian-advocate organizations.

College of Agriculture

W.D. BATCHELOR, Dean

P.M. PATTERSON, Associate Dean

THE COLLEGE OF AGRICULTURE prepares students for a variety of opportunities throughout a global food, agricultural and natural resource system by emphasizing living sciences and providing challenging science-based curricula. Graduates are prepared to become productive global citizens and to address the challenges of providing a safe, affordable food, fiber and renewable bio-energy system while protecting environmental and water resources. Many of the basic science courses taken in the freshman and sophomore years serve as a foundation for additional basic and applied coursework in a specific major during the junior and senior year. The college's student-focused atmosphere fosters strong academic, engaged learning environments and student development around life-skills and international issues.

Curricula are offered in agricultural business and economics, agricultural communications, agronomy and soils, animal sciences, environmental science, fisheries and allied aquacultures, food science, horticulture and poultry science. The College of Agriculture also furnishes the subject matter training in agriculture for the curricula of biosystems engineering and agriscience education.

Employment opportunities for graduates with expertise gained in these majors are forecast to remain strong. A survey of recent baccalaureate graduates from the 2010-11 academic year conducted by 15 colleges of agriculture found the average starting salary was higher than previous years. Possible careers include: agricultural economists, agricultural engineers, agronomists, animal nutritionists, aquaculturalists, biochemists, biological engineers, biometricians, botanists, business managers, cell biologists, climatologists, educators, extension specialists, entomologists, environmental scientists, farm services, fisheries scientists, florists, food systems and safety workers, food scientists, golf course managers, poultry scientists, molecular biologists, plant pathologists, plant physiologists, quality assurance workers, rural sociologists, science writers, soil scientists, toxicologists, turf scientist/specialists, as well as the foundation for entrance to graduate school, law, and health-related professional schools.

Transfer Credits

Transfer credits for agricultural subjects not considered equivalent to those required in the chosen curriculum may be substituted for elective credit; however, duplication of credit will not be allowed. Equivalence of agricultural subjects will be determined by the Dean's Office; however, students may also obtain transfer credit on the basis of validating examinations. Arrangements for validating examinations must be made with the academic dean of Agriculture in the first term of enrollment in the College of Agriculture at Auburn and the examinations must be completed before the middle of the second term. Transfer credit for courses which are upper-division courses at AU will not be accepted from two-year colleges.

Pre-Veterinary Medicine and Pre-Professional

Curricula within the college enable students to complete requirements for admission to health related professional schools. It is possible to gain admission to colleges of veterinary medicine or other health-related professional schools after a student's third year of undergraduate studies. If students are admitted to a college of veterinary medicine or other professional program after the completion of their third year, they may obtain a bachelor of science degree in their selected degree program after successful completion of their first year in a college of veterinary medicine or other professional degree program. The specific graduation requirements may be obtained from a program advisor or academic advisor for the college. The minimum requirements for admission to most colleges of veterinary medicine and other professional programs are incorporated in the first three years of the options listed under the following curricula: animal sciences, fisheries and allied aquacultures and poultry science. (See also the curriculum in Pre-Veterinary Medicine in the College of Science and Mathematics and School of Forestry and Wildlife Sciences).

Majors

- Agricultural Business & Economics (p. 113)
- Agricultural Communications (p. 110)
- Agronomy & Soils - Business Track (p. 117)
- Agronomy & Soils - Production Track (p. 118)
- Agronomy & Soils - Science Track (p. 119)
- Agronomy & Soils - Turfgrass Track (p. 120)
- Agronomy & Soils - Soil, Water and Land Use Option (p. 116)
- Animal Sciences - Equine Science Option (p. 124)
- Animal Sciences - Muscle Foods Option (p. 125)
- Animal Sciences - Pre-Vet - Pre-Professional Option (p. 127)
- Animal Sciences - Production Management Option (p. 126)
- Biosystems Engineering (p. 234)
- Biosystems Engineering (Ecological Engineering option) (p. 236)
- Biosystems Engineering (Forest Engineering option) (p. 233)
- Environmental Science (p. 122)
- Fisheries and Allied Aquacultures (p. 130)
- Fisheries and Allied Aquacultures - Pre-Professional Option (p. 131)
- Horticulture - Fruit and Vegetable Production Emphasis (p. 133)
- Horticulture - Landscape Horticulture Emphasis (p. 134)
- Horticulture - Nursery and Greenhouse Science Emphasis (p. 136)
- Horticulture - Pre-Landscape Architecture Emphasis (p. 137)

- Poultry Science - Food Science (p. 139)
- Poultry Science - Poultry Processing and Products (p. 140)
- Poultry Science - Poultry Production (p. 142)
- Poultry Science - Poultry Science/Pre-Veterinary Medicine (p. 143)

Minors

- Agribusiness (p. 112)
- Agricultural Leadership (p. 145)
- Agronomy and Soils (p. 117)
- Animal Sciences (p. 124)
- Entomology (p. 129)
- Fisheries and Allied Aquacultures (p. 132)
- Natural Resources Economics and Environmental Policy (p. 115)
- Plant Pathology (p. 129)
- Poultry Science (p. 145)
- Rural and Community Development (p. 115)

Program

- Agricultural Economics - MS, MAg (p. 481)
- Applied Economics - PhD (p. 481)
- Agronomy and Soils - MS, MAg, PhD (p. 482)
- Animal Sciences - MS, MAg, PhD (p. 483)
- Biosystems Engineering - MS, PhD (p. 488)
- Entomology - MS, MAg, PhD (p. 509)
- Fisheries and Allied Aquacultures - MAq, MS, PhD (p. 511)
- Food Science - MAg, MS, PhD (p. 511)
- Horticulture - MS, MAg, PhD (p. 517)
- Plant Pathology - MAg, MS, PhD (p. 533)
- Poultry Science - MAg, MS, PhD (p. 534)
- Rural Sociology, MS (p. 481)

Agricultural Communications Major

The Agricultural Communications program is designed to produce graduates who possess exceptional communication skills meshed with a strong science-based background in agriculture and natural resources. This degree enables graduates to communicate vital information related to science, agriculture, natural resources, food and the environment to diverse audiences. Agricultural Communications graduates are prepared to work in the public and private sectors—from corporations to government agencies to nonprofits—pursuing a variety of careers including: writers, photographers, graphic designers, Web developers and managers, videographers, electronic/digital media producers, marketing specialists, public relations practitioners, publishers, researchers, distance education specialists, overseas development workers, extension educators and managers and editors of magazines and other printed or online news venues. Graduates work throughout corporate America, institutions of higher learning, government agencies, medical technology operations, lobbyist and advocacy groups, non-profits and research organizations in the public and private sector. This combination of technical subject matter knowledge and communication skills is not found in other curricula. The program also prepares students for graduate and professional schools, including law school.

Goals are to develop proficient communicators who 1) promote a broader understanding of agriculture, natural resources, the environment and science among a diverse and global citizenry; 2) recognize and exercise with integrity, their potential as catalysts for using information technologies and knowledge to improve the quality of life for others; 3) possess a thorough understanding of the

important social, scientific, economic and environmental concepts and issues that relate to agriculture and natural resources; and 4) apply critical thinking skills to understand and explain complex agricultural and environmental issues and their implication on local, national and international levels. Opportunities for portfolio development within the degree program are extensive through internship and practicum classes.

Curriculum in Agricultural Communications

Freshman

Fall	Hours	Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1130 Pre-Calculus Trigonometry	3	AGRI 1080 Agricultural Communications	3
COMM 1000 Public Speaking	3	Core History 2	3
Core History 1	3	Core Social Science ¹	3
	16		16

Sophomore

Fall	Hours	Spring	Hours
CHEM 1010 Survey of Chemistry I	3	COMM 3500 Foundations of Human Communication	3
CHEM 1011 Survey of Chemistry I Laboratory	1	Communication Elective (JRNL) ²	3
Core Humanities (Fine Arts)	3	Ag Group I ³	3-4
JRNL 1100 Journalism Fundamentals	3	COMP 1000 Personal Computer Applications	2
Core Humanities (ENGL Literature)	3	Core Humanities (PHIL)	3
CMJN 2100 Concepts in Communications and Journalism	3		
	16		14-15

Junior

Fall	Hours	Spring	Hours	Summer	Hours
COMM 3600 Foundations of Rhetoric and Social Influence	3	RTVF 3300 Foundation of Mass Communication	3	AGRI 4920 Internship in Agricultural Communication and Leadership	3
AG Support Courses	3	Communications Elective (JRNL) ²	3		
Communications Elective (RTVF) ²	3	AGRN 2040 Basic Soil Science	4		
Ag Group II ³	4	Ag Group III ³	3-4		
ECON 2020 Principles of Microeconomics	3	Free Elective	1-3		
	16		14-17		3

Senior

Fall	Hours	Spring	Hours
PRCM 3040 Foundations of Public Relations	3	Communications Support Courses ⁵	6

Communications Support Courses ⁵	6 Ag Support Courses	3
AGEC 4070 Agricultural Law	3 Communication Elective (PRCM) ²	3
AGEC 3010 Agribusiness Marketing or 4000 Principles of Agribusiness Management	3 UNIV 4AA0 University Graduation	0

15**12**

Total Hours: 122-126

- ¹ Students will choose from the following: ANTH 1000, GEOG 1010/GEOG 1017, PSYC 2010, SOCY 1000/SOCY 1007, UNIV 2710 or UNIV 2720/UNIV 2727.
- ² Communications Electives: Must be selected from 2000 or higher level courses in the following areas: JRNL (2 Courses), PRCM (1 Course) and RTVF (1 Course).
- ³ Agriculture Electives: Choose one from each group: Group I - Animal Sciences: ANSC 1000 or POUL 1000 (Fall only) or FISH 2100 (2nd Summer session only) Group II - Plant Sciences: AGRN 1000 or HORT 2010 (Fall only) or HORT 2020 (Fall only) Group III - Insects and Diseases: ENTM 2040 or ENTM 3040 or PLPA 3000
- ⁴ Agriculture Support Courses: Must select 6 hours preferably from 3000 or higher level courses in the following areas: AGRI, AGECE, AGRN, ANSC, ENVI, FDSC, FISH, HORT, or POUL
- ⁵ Communication Support Courses: Must select 12 hours with at least 6 hours being at the 3000 or higher level from the following areas: COMM, JRNL, PRCM, or RTVF

Agricultural Economics and Rural Sociology

The curriculum provides broad technical training and a strong liberal arts and business background to prepare students for careers in a wide array of agribusiness and related fields.

Students are encouraged to use professional electives to complete a minor from the College of Agriculture, the College of Business the College of Sciences and Mathematics or the School of Forestry and Wildlife Sciences or in Economics in the College of Liberal Arts. Otherwise, students may follow a general program by selecting from courses at the 3000-level or higher in the College of Agriculture, the College of Business, College of Mathematics and Sciences or the School of Forestry and Wildlife, as well as offerings at the 3000 level or better in Economics, Sociology, Anthropology, Geography, Political Science, or Statistics. Basic Soil Science (AGRN 2040) may also be counted as a professional elective, as may up to 8 hours of a foreign language, regardless of the level. Students are encouraged to see their advisors to plan their professional electives around an interest area that best meets their career aspirations.

Major

- Agricultural Business & Economics (p. 113)

Minor

- Agribusiness (p. 112)
- Natural Resources Economics and Environmental Policy (p. 115)
- Rural and Community Development (p. 115)

Agribusiness Minor

18 semester hours in minor (minimum 9 hours at 3000-level or above)

ACCT 2810	Fundamentals Of Accounting	3
AGEC 4040	Agricultural Finance	3
Select one of the following:		3
AGEC 4000	Principles of Agribusiness Management	

AGEC 5010	Farm Management	
AGEC 5100	Agricultural Business Management	
Elective Courses - See below course listing below.		9
Total Hours		18

Choose 9 hours to satisfy elective courses

AGEC 3010	Agribusiness Marketing	3
AGEC 3080	Futures and Options Marketing	2
AGEC 3300	Agricultural Policies and Trade	3
AGEC 4070	Agricultural Law	3
AGEC 4100	Agricultural Cooperatives	2
AGEC 5030	Agricultural Prices	3

Curriculum in Agricultural Business & Economics

Plan of Study Grid

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
HIST 1210 Technology and Civilization I		3 HIST 1220 Technology And Civilization II ¹	3
MATH 1680 Calculus with Business Applications I		4 MATH 1690 Calculus With Business Apps II	3
SOCY 1000 Sociology Global Perspective		3 COMP 1000 Personal Computer Applications	2
Fine Arts Core ²		3 ECON 2020 Principles of Microeconomics ³	3
		16	14

Sophomore

Fall	Hours	Spring	Hours
ACCT 2110 Principles of Financial Accounting		3 ACCT 2210 Principles of Managerial Accounting	3
BIOL 1020 (https://nextbulletin.auburn.edu/courseleaf/js/fckeditor/editor/fckeditor.html?InstanceName=attr_text&Toolbar=PageWizard) Principles of Biology & BIOL 1021 (https://nextbulletin.auburn.edu/courseleaf/js/fckeditor/editor/fckeditor.html?InstanceName=attr_text&Toolbar=PageWizard) Principles of Biology Laboratory		4 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
ECON 2030 Principles of Macroeconomics		3 STAT 2610 Statistics for Business and Economics ⁶	3
ENGL 2200 World Literature before 1600 ⁴		3 COMM 1000 Public Speaking	3

PHIL 1040 (https://nextbulletin.auburn.edu/courseleaf/js/fckeditor/editor/fckeditor.html?InstanceName=attr_text&Toolbar=PageWizard) Business Ethics ⁵		3 Free Elective	2
		16	15
Junior			
Fall	Hours	Spring	Hours
AGEC 3100 Computer Applications in Agricultural Economics		3 AGEC 3010 Agribusiness Marketing	3
AGEC 4040 Agricultural Finance		3 AGEC 3300 Agricultural Policies and Trade	3
ECON 3020 Intermediate Microeconomics		3 AGEC 3950 Careers in Agricultural Business and Economics	1
ENGL 3080 (https://nextbulletin.auburn.edu/courseleaf/js/fckeditor/editor/fckeditor.html?InstanceName=attr_text&Toolbar=PageWizard) Business Writing		3 Professional Elective⁸	4
Agricultural Elective ⁷		3-4 Agricultural Elective ⁷	3-4
		15-16	14-15
Senior			
Fall	Hours	Spring	Hours
AGEC 4070 Agricultural Law		3 AGEC 5010 Farm Management	3
AGEC 5090 Resource Economics I		3 AGEC 5030 Agricultural Prices	3
AGEC 5100 Agricultural Business Management		3 UNIV 4AA0 University Graduation	0
Professional Elective ⁸		5 Professional Elective⁸	5
		Free Elective	3
		14	14
Total Hours: 120			

Note: A minimum of 120 hours is required.

- ¹ HIST 1010 & HIST 1020 (World History I & II) may be substituted.
- ² Select one from: ARCH 2600; ARTS 1710, ARTS 1720 or ARTS 1730; MUSI 2730/MUSI 2737; RTVF 2350 or THEA 2010.
- ³ A grade of C or better in ECON 2020 Principles of Microeconomics (or ECON 2027 Honors Principles of Microeconomics) is required to advance to upper division courses in this major.
- ⁴ Possible substitutes include ENGL 2210, ENGL 2230, ENGL 2240, ENGL 2250 or ENGL 2260
- ⁴ PHIL 1020 Introduction to Ethics may be substituted.
- ⁵ Possible substitutes include STAT 2010 Statistics for Social and Behavioral Sciences and STAT 2510 Statistics for Biological and Health Sciences may be substituted.
- ⁶ Select one Agriculture Elective from Group I and one from Group II below:
(Group I - Animal Sciences): ANSC 1000 or POUL 1000 and
(Group II - Plant Sciences): AGRN 1000, HORT 2010, HORT 2020 or HORT 2030.

- ⁷ Select from any course at the 3000-level or higher in the College of Agriculture, the College of Business, College of Sciences and Mathematics or the School of Forestry and Wildlife Sciences, as well as offerings at the 3000 level or better in Sociology, Anthropology, Geography, Political Science, or Statistics (except AGECE 4000 Principles of Agribusiness Management). Basic Soil Science (AGRN 2040) may also be counted as a professional elective, as may up to 8 hours of a foreign language, regardless of the level. Any course that is used to complete a minor may also be counted as a professional elective. Students are encouraged to see their advisors to plan their professional electives around an interest area that best meets their career aspirations. No more than three hours of professional electives can come from X9XX courses.

Natural Resources Economics and Environmental Policy Minor

15 semester hours in minor (minimum 12 hours at 3000-level or above)

Group A

Select three of the following: 9

AGECE 5090	Resource Economics I
ECON 5200	Urban and Regional Economic Development
RSOC 5650	Sociology of Natural Resources and the Environment
GEOG 5830	Geographic Information Systems

Group B

Select two of the following: 6

AGECE 4120	Environmental and Natural Resource Economics
AGECE 3300	Agricultural Policies and Trade
FORN 5310	Environmental Ethics
FORN 5540/6540	Environmental Law

Total Hours 15

Rural and Community Development Minor

15 semester hours in minor (minimum 9 hours at 3000-level or above)

RSOC 3620	Community Organization	3
SOCY 3700	Methods of Social Research	3
Elective Courses - See advisor for approved course listing.		9
Total Hours		15

Choose 9 hours to satisfy elective courses.

RSOC 3190	Agriculture and Society	3
RSOC 4410	Extension Programs and Methods	3
RSOC 4910	Directed Field Experience	3
RSOC 4930	Directed Studies	1-3
RSOC 5610	Rural Sociology	3
RSOC 5640	Sociology of Community Development	3
RSOC 5650	Sociology of Natural Resources and the Environment	3

Agronomy and Soils

Courses prepare Agronomy graduates for careers in: (1) turfgrass industry, (2) agri-life industry, producers of fertilizers, herbicides and other agricultural products; (3) farm-advisory agencies such as soil-testing laboratories and other private consultants; (4) public farm-advisory agencies such as the Agricultural Extension System or the Natural Resources Conservation Service; (5) research agencies or corporations, U.S. Department of Agriculture, colleges and universities and Agricultural Experiment Stations; (6) farming, and (7)

environmental agencies. Coursework provides a thorough background in cropping systems, agriculture and its relationships with soil, water and the environment, and alternative uses for crops, such as bioenergy.

Majors

- Agronomy & Soils - Production Option (p. 118)
- Agronomy & Soils - Science Option (p. 119)
- Agronomy & Soils - Turfgrass Option (p. 120)
- Agronomy & Soils - Soil, Water and Land Use Option (p. 116)

Minor

- Agronomy and Soils (p. 117)

Agronomy & Soils - Soil, Water and Land Use Option

Freshman

Fall	Hours	Spring	Hours
BIOL 1020 Principles of Biology	4	BIOL 1030 Organismal Biology	4
MATH 1130 Pre-Calculus Trigonometry	3	CHEM 1040 Fundamental Chemistry II & CHEM 1041 Fundamental Chemistry II Laboratory	4
AGRN 1000 Basic Crop Science	4	MATH 1610 Calculus I	4
CHEM 1030 Fundamentals Chemistry I	3	ENGL 1100 English Composition I	3
CHEM 1031 Fundamental Chemistry I Laboratory	1		
	15		15

Sophomore

Fall	Hours	Spring	Hours
CHEM 3050 Analytical Chemistry & CHEM 3051 Analytical Chemistry Laboratory	4	ENGL 1120 English Composition II	3
AGRN 2040 Basic Soil Science	4	STAT 2510 Statistics for Biological and Health Sciences	3
GEOL 1100 Physical Geology	4	CHEM 2030 Survey of Organic Chemistry	3
Core History I	3	Core Social Science	3
		Core History II	3
	15		15

Junior

Fall	Hours	Spring	Hours
AGRN 5000 Soils Environmental Quality	3	AGRN 5150 Soil Morphology	4
ECON 2020 Principles of Microeconomics	3	GEOL 2100 Environmental Geology	4
AGRN 5300 Soil Chemistry	4	PHYS 1500 General Physics I	4
Approved Humanities choice	3	Free Elective	3
Core Humanities (English Lit)	3		
	16		15

Senior

Fall	Hours	Spring	Hours
AGRN 5590 Environmental Soil Physics		4 AGRN 5061 Soil Microbiology Laboratory	1
GEOL 5100 Hydrogeology		3 GEOG 5830 Geographic Information Systems	4
Core Humanities (Fine Arts)		3 AGRN 5060 Soil Microbiology Lecture	3
Option course		4 AGRN 4950 Senior Seminar	2
		Core Humanities	3
		Option course	3
	14		16

 Total Hours: 121

Agronomy and Soils Minor

17 semester hours in minor (minimum 9 hours at 3000-level or above)

AGRN 1000	Basic Crop Science	4
AGRN 2040	Basic Soil Science	4
Elective Courses - See advisor for approved course listing.		9
Total Hours		17

Curriculum in Agronomy & Soils - Business Track

Freshman

Fall	Hours	Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory		4 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
CHEM 1030 Fundamentals Chemistry I		3 CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory		1 CHEM 1041 Fundamental Chemistry II Laboratory	1
MATH 1130 Pre-Calculus Trigonometry		3 ENGL 1100 English Composition I	3
AGRN 1000 Basic Crop Science ¹		4 MATH 1610 Calculus I	4
Free Elective ²		1	
	16		15

Sophomore

Fall	Hours	Spring	Hours
Core History I		3 ECON 2020 Principles of Microeconomics	3
Core Social Science		3 Core History II	3
ENGL 1120 English Composition II		3 Core Humanities (English Lit)	3
ACCT 2810 Fundamentals Of Accounting		3 AGRN 2040 Basic Soil Science	4
STAT 2510 Statistics for Biological and Health Sciences		3 CHEM 2030 Survey of Organic Chemistry	3
	15		16

Junior

Fall	Hours	Spring	Hours
BIOL 3100 Plant Biology		4 PLPA 3000 General Plant Pathology	4
Approved Humanities choice ⁴		3 AGRN 4010 Forage Production and Utilization or 3150 Turfgrass Management	3-4
AGRN 3120 Principles of Weed Science		4 AGRN 5150 Soil Morphology	4
MNGT 3100 Principles of Management		3 Free Elective ⁵	1-2
	14		12-14

Senior

Fall	Hours	Spring	Hours
Core Humanities (Fine Arts)		3 Core Humanities	3
AGRN 5100 Plant Genetics and Crop Improvement		3 AGEK 4070 Agricultural Law	3
AGRN 5000 Soils Environmental Quality		3 ENTM 4020 Economic Entomology	4
AGEK 4000 Principles of Agribusiness Management		3 AGRN 4000 Advanced Crop Science	3
Elective		2 AGRN 5020 Nutrient Management	3
		AGRN 4950 Senior Seminar	2
		UNIV 4AA0 University Graduation	0
	14		18

Total Hours: 120-122

- ¹ Courses in boldface are major courses and require a minimum of 2.0 GPA for graduation.
- ² Six credits of advanced ROTC can be substituted for free electives and 1 or 2 credits of required courses not in the required Core or Major (boldface courses)
- ⁴ Students must select a Core Humanities course that satisfies SLO 3. See the 2012-2013 *Bulletin* or an advisor for a list of approved choices.
- ⁵ Elective hours required will be determined by whether AGRN 4010 or AGRN 3150 is selected.

Curriculum in Agronomy & Soils - Production Track

Freshman

Fall	Hours	Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory		4 BIOL 1030 Organismal Biology	4
CHEM 1030 Fundamentals Chemistry I		3 CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory		1 CHEM 1041 Fundamental Chemistry II Laboratory	1
MATH 1130 Pre-Calculus Trigonometry		3 ENGL 1100 English Composition I	3
AGRN 1000 Basic Crop Science		4 MATH 1610 Calculus I	4
Free Elective ²		1	
	16		15

Sophomore

Fall	Hours	Spring	Hours
ENGL 1120 English Composition II		3 Core History II	3
Core History I		3 Core Humanities (English Lit)	3
ACCT 2810 Fundamentals Of Accounting		3 Core Social Science	3
STAT 2510 Statistics for Biological and Health Sciences		3 Core Humanities (Fine Arts)	3
AGRN 2040 Basic Soil Science		4 CHEM 2030 Survey of Organic Chemistry	3
	16		15

Junior

Fall	Hours	Spring	Hours
ECON 2020 Principles of Microeconomics		3 Nutrient Management	3
BIOL 3100 Plant Biology		4 General Plant Pathology	4
AGRN 3120 Principles of Weed Science		4 Advanced Crop Production	3
AGRN 3150 Turfgrass Management		4 AGRN 5150 Soil Morphology	4
		Elective	1
	15		15

Senior

Fall	Hours	Spring	Hours
AGEC 4000 Principles of Agribusiness Management		3 Approved Humanities choice ⁴	3
AGRN 5000 Soils Environmental Quality		3 Core Humanities	3
AGRN 5080 Soil Resources and Conservation		4 AGRN 4010 Forage Production and Utilization	3
AGRN 5100 Plant Genetics and Crop Improvement		3 AGRN 4950 Senior Seminar	2
Elective		1 ENTM 4020 Economic Entomology	4
		UNIV 4AA0 University Graduation	0
	14		15

Total Hours: 121

¹ Courses in boldface type are major courses and require a 2.0 minimum GPA for graduation.

² Six credits of advanced ROTC can be substituted for free electives and 3 credits of required courses not in the required Core or Major (boldface courses)

⁴ Students must select a Core Humanities course that satisfies SLO 3. See the 2011-2012 *Bulletin* or an advisor for a list of approved choices.

Curriculum in Agronomy & Soils - Science Track

Freshman

Fall	Hours	Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory		4 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
CHEM 1030 Fundamentals Chemistry I		3 CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory		1 CHEM 1041 Fundamental Chemistry II Laboratory	1

MATH 1130 Pre-Calculus Trigonometry	3	ENGL 1100 English Composition I	3
AGRN 1000 Basic Crop Science ¹	4	MATH 1610 Calculus I	4
Free Elective ²	1		
	16		15
Sophomore			
Fall	Hours	Spring	Hours
ENGL 1120 English Composition II	3	Core History II ²	3
Core History I ²	3	Core Humanities (English Lit)	3
CHEM 2070 Organic Chemistry I	3	Core Social Science	3
CHEM 2071 Organic Chemistry I Laboratory	1	STAT 2510 Statistics for Biological and Health Sciences	3
AGRN 2040 Basic Soil Science	4	CHEM 3050 Analytical Chemistry	3
		CHEM 3051 Analytical Chemistry Laboratory	1
	14		16
Junior			
Fall	Hours	Spring	Hours
ECON 2020 Principles of Microeconomics	3	BIOL 3000 Genetics	4
Approved Humanities choice ⁴	3	PHYS 1500 General Physics I	4
BIOL 3100 Plant Biology	4	PLPA 3000 General Plant Pathology	4
AGRN 3120 Principles of Weed Science	4	AGRN 5150 Soil Morphology or BIOL 5120 Systematic Botany	4
	14		16
Senior			
Fall	Hours	Spring	Hours
Core Humanities (Fine Arts)	3	Core Humanities	3
ENTM 4020 Economic Entomology	4	AGRN 5020 Nutrient Management	3
BIOL 3200 General Microbiology	4	Agronomy & Soils Elective ⁵	4
Agronomy & Soils Elective ⁵	4	AGRN 4010 Forage Production and Utilization or 4000 Advanced Crop Science	3
		AGRN 4950 Senior Seminar	2
		UNIV 4AA0 University Graduation	0
	15		15

Total Hours: 121

¹ Courses in boldface are major courses and require a 2.0 minimum GPA for graduation.

² Since there are very few free electives in this curriculum five hours of advanced ROTC can be substituted for any course not in the required Core or Major (boldface courses).

⁴ Students must select a Core Humanities course that satisfies SLO 3. See the 2012-2013 *Bulletin* or an advisor for a list of approved choices.

⁵ Agronomy & Soils electives to be taken from courses approved by advisor.

Curriculum in Agronomy & Soils - Turfgrass Track

Freshman

Fall	Hours	Spring	Hours	Summer	Hours
BIOL 1020 Principles of Biology	4	BIOL 1030 Organismal Biology	4	Core History I	3
CHEM 1030 Fundamentals Chemistry I & CHEM 1031 Fundamental Chemistry I Laboratory	4	CHEM 1040 Fundamental Chemistry II & CHEM 1041 Fundamental Chemistry II Laboratory	4	Free Electives	3
MATH 1130 Pre-Calculus Trigonometry	3	ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
AGRN 1000 Basic Crop Science	4	AGRN 2040 Basic Soil Science	4	FLSP 1010 Elementary Spanish I	4
	15		15		13
Sophomore					
Fall	Hours	Spring	Hours		
Core Humanities (English Lit)	3	Core History II	3		
AGRN 3150 Turfgrass Management	4	HORT 3000 Growth and Development of Horticultural Plants	3		
AGRN 3120 Principles of Weed Science	4	CHEM 2030 Survey of Organic Chemistry	3		
AGRN 3200 Applied Turf Management	3	ECON 2020 Principles of Microeconomics	3		
		Core Social Science	3		
	14		15		
Junior					
Fall	Hours	Spring	Hours		
Core Humanities	3	AGRN 3920 Agronomy and Soils Internship	3		
Approved Humanities Choice	3				
PLPA 3000 General Plant Pathology	4				
AGRN 5000 Soils Environmental Quality	3				
BSEN 3560 Turf Systems Irrigation Design	3				
	16		3		
Senior					
Fall	Hours	Spring	Hours		
Plan / Soil Science Elective	4	Plant / Soil Science Elective	3		
Core Humanities (Fine Arts)	3	AGRN 5020 Nutrient Management	3		
ACCT 2810 Fundamentals Of Accounting	3	AGRN 5160 Advanced Turfgrass Management	3		
STAT 2510 Statistics for Biological and Health Sciences	3	AGRN 5180 Sports Turf Management	3		
AGRN 4950 Senior Seminar	2	ENTM 4020 Economic Entomology	4		
		UNIV 4AA0 University Graduation	0		
	15		16		

Total Hours: 122

Footnotes

- ¹ Courses in boldface are major courses and require a 2.0 minimum GPA for graduation.
- ² Since there are very few electives in this curriculum four hours of advanced ROTC can be substituted for any course not in the required Core or Major (boldface courses).
- ³ Students must select a Core Humanities course that satisfies SLO 3. See the 2012-2013 *Bulletin* or an advisor for a list of approved choices.
- ⁴ See advisor for approved list for Soils Electives, ECON/MNGT Electives, Plant Science Electives.

Curriculum in Environmental Sciences

The Environmental Science program, like the rather broad field of environmental science, is by its very nature highly interdisciplinary. Although the College of Agriculture administers the program through the Department of Agronomy and Soils, the Samuel Ginn College of Engineering and the College of Sciences and Mathematics are partners in developing the curriculum, guiding student development and providing instruction.

Environmental quality issues are often complex and significant expertise in physics, chemistry, biology, soil science and geology is needed to understand specific problems. Moreover, formulating solutions often requires mathematical expertise as well as specific knowledge of the air, water, and soil environments. Thus, the program is structured to educate environmental scientists broadly, but with considerable depth.

The program is specifically tailored to produce graduates who can enter and have a reasonable expectation of success in a field that is continually changing. The principal educational goals are to provide each student with a broad-based general education, a solid background in mathematics, physical science, and biological science, breadth of exposure to the environmental science field, and depth of knowledge in a specific area of environmental science of choice.

The curriculum is organized around a core set of courses that are required of all students. Students desiring to specialize may select from groups of courses, called professional tracks, that emphasize environmental applications of biological science, physical science, soil science, or engineering science. A general environmental science track is also available.

Freshman

Fall	Hours	Spring	Hours
CHEM 1030 Fundamentals Chemistry I & CHEM 1041 Fundamental Chemistry II Laboratory	4	BIOL 1020 Principles of Biology	4
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1040 Fundamental Chemistry II & CHEM 1041 Fundamental Chemistry II Laboratory	4
ENGL 1100 English Composition I	3	CHEM 1041 Fundamental Chemistry II Laboratory	1
MATH 1610 Calculus I	4	ENGL 1120 English Composition II	3
Core History 1	3	Core History 2	3
COMP 1000 Personal Computer Applications	2	ENVI 1020 Fundamentals of Environmental Science	2
ENVI 1010 Introduction to Environmental Science	0		
	17		17

Sophomore

Fall	Hours	Spring	Hours
BIOL 1030 Organismal Biology	4	PHYS 1510 General Physics II	4
PHYS 1500 General Physics I	4	Core Humanities	3
Core Literature	3	CHEM 2030 Survey of Organic Chemistry	3
GEOL 1100 Physical Geology	4	STAT 2510 Statistics for Biological and Health Sciences	3

ENVI 2010 Environmental Science Seminar	1 GEOL 2100 Environmental Geology	4
	16	17

Junior

Fall	Hours Spring	Hours
FORV 5470 GIS Applications in Natural Resources	2 CHEM 3050 Analytical Chemistry	3
AGRN 2040 Basic Soil Science	4 CHEM 3051 Analytical Chemistry Laboratory	1
BIOL 3200 General Microbiology	4 BIOL 3060 Ecology	4
Professional Track ¹	6 CIVL 3220 Water and Waste Treatment	4
	Professional Track ¹	4
	16	16

Senior

Fall	Hours Spring	Hours
PHIL 1020 Introduction to Ethics	3 Core Humanities (Fine Arts)	3
ECON 2020 Principles of Microeconomics	3 Core Social Science ²	3
FORV 5540/6540 Environmental Law	3 Professional Track ¹	7
Professional Track ¹	7 Elective	2
	UNIV 4AA0 University Graduation	0
	16	15

Total Hours: 130

¹ Professional Track - see adviser for approved course listing.

² Student will choose from the following: ANTH 1000, GEOG 1010/GEOG 1017, PSYC 2010, SOCY 1000/SOCY 1007, or UNIV 2720/UNIV 2727.

Animal Sciences

The department offers four curriculum options. The Pre-Vet/Pre-Professional option (ANPV) provides students with a foundation in the biological and physical sciences for careers in emerging areas of animal biotechnology while satisfying requirements for application to Auburn's College of Veterinary Medicine, other professional schools, or graduate school. The Production Management option (ANPM) offers greater breadth in animal production management and agribusiness while retaining more electives hours for additional curriculum flexibility. The Equine Science option (ANEQ) allows students to focus on the sciences and practical skills required for a successful career in the horse industry, and by choosing, appropriate elective courses, will prepare students to apply to Auburn's College of Veterinary Medicine. The Muscle Foods option (ANMF) prepares students for quality assurance and for research and development careers in the food industry. Students may use electives to develop expertise in fields such as animal breeding, nutrition, reproduction, growth, behavior, equine science, and companion animals.

Majors

- Animal Sciences - Equine Science Option (p. 124)
- Animal Sciences - Muscle Foods Option (p. 125)
- Animal Sciences - Pre-Vet - Pre-Professional Option (p. 127)
- Animal Sciences - Production Management Option (p. 126)

Minor

- Animal Sciences (p. 124)

Animal Sciences Minor

15 semester hours in minor (minimum 9 hours at 3000-level or above)

ANSC 1000	Introduction to Animal Sciences	4
Elective Courses - See advisor for approved listing.		11
Total Hours		15

Curriculum in Animal Sciences - Equine Science Option

Freshman

Fall	Hours	Spring	Hours
ANSC 1100 Orientation to Animal Sciences	1	ANSC 1000 Introduction to Animal Sciences	4
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1130 Pre-Calculus Trigonometry	3		
	15		15

Sophomore

Fall	Hours	Spring	Hours
BIOL 2500 Human Anatomy and Physiology I	4	BIOL 2510 Human Anatomy and Physiology II	4
HIST 1010 World History I	3	CHEM 2030 Survey of Organic Chemistry	3
STAT 2510 Statistics for Biological and Health Sciences	3	COMM 1000 Public Speaking	3
Core Literature	3	ECON 2020 Principles of Microeconomics	3
Directed Elective ²	3	HIST 1020 World History II	3
	16		16

Junior

Fall	Hours	Spring	Hours
AGEC 4000 Principles of Agribusiness Management	3	ANSC 3400 Animal Nutrition	4
ANSC 3600 Reproductive Physiology	4	ANSC 3500 Animal Breeding	3
BCHE 3200 Principles of Biochemistry	3	ANSC 3800 Careers in Animal Science	1
BIOL 3000 Genetics	4	Directed Elective ²	3
		Core Social Science	3
	14		14

Senior

Fall	Hours	Spring	Hours
BIOL 3200 General Microbiology	4	AGRN 4010 Forage Production and Utilization	3

Core Fine Arts	3 ANSC 4050 Horse Production	4
Approved Humanities Core ¹	3 Directed Elective ²	3
Directed Elective ²	3 Free Electives	4
Free Electives	3 UNIV 4AA0 University Graduation	0
	16	14

Total Hours: 120

¹ Select a Core Humanities course that meets SLO 3 (such as Philosophy). See AU *Bulletin* for a listing.

² Directed Electives:
 ANSC 2050 Introduction to Horse Management and Training
 ANSC 2650 Equine Biomechanics and Shoeing
 ANSC 3150 Equine Marketing
 ANSC 3350 Equestrian Coaching
 ANSC 3650 Physiology of Equine Athlete
 ANSC 4450 Equine Nutrition
 ANSC 4650 Equine Reproductive Techniques

Curriculum in Animal Sciences - Muscle Foods Option

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
MATH 1130 Pre-Calculus Trigonometry		3 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory		4 CHEM 1040 Fundamental Chemistry II	3
CHEM 1030 Fundamentals Chemistry I		3 CHEM 1041 Fundamental Chemistry II Laboratory	1
CHEM 1031 Fundamental Chemistry I Laboratory		1 ANSC 1000 Introduction to Animal Sciences	4
ANSC 1100 Orientation to Animal Sciences		1	
	15		15

Sophomore

Fall	Hours	Spring	Hours
ANSC 2720 Introduction to Meat Science		2 ANSC 3760 Value Based Marketing of Livestock	3
BIOL 2500 Human Anatomy and Physiology I		4 BIOL 2510 Human Anatomy and Physiology II	4
ECON 2020 Principles of Microeconomics		3 CHEM 2030 Survey of Organic Chemistry	3
HIST 1010 World History I		3 HIST 1020 World History II	3
Core Literature		3 STAT 2510 Statistics for Biological and Health Sciences	3
	15		16

Junior

Fall	Hours	Spring	Hours
BCHE 3200 Principles of Biochemistry		3 Core Social Science	3
BIOL 3000 Genetics		4 ANSC 3610 Animal Growth and Development	4
COMM 1000 Public Speaking		3 ANSC 3700 Muscle Foods	4
Core Fine Arts		3 ANSC 3800 Careers in Animal Science	1

Approved Humanities Choice ¹	3 MF Support ³	3-4
	16	15-16
Senior		
Fall	Hours Spring	Hours
ANSC Core I	4 ANSC Core II ²	3-4
ANSC 4700 Meat Processing	4 Free Electives	7-10
BIOL 3200 General Microbiology	4 UNIV 4AA0 University Graduation	0
MF Support ³	3-4	
	15-16	10-14
Total Hours: 117-123		

Note: A minimum of 120 hours is required.

¹ Select a Core Humanities course that meets SLO 3 (such as Philosophy). See AU *Bulletin* for a listing.

² ANSC Core I/II; choose two of these three courses; ANSC 3400, ANSC 3500, or ANSC 3600.

³ Muscle Foods (MF) Support courses; see your advisor or the advising check sheet for ANMF.

Curriculum in Animal Sciences - Production Management Option

Freshman

Fall	Hours Spring	Hours
ANSC 1100 Orientation to Animal Sciences	1 ANSC 1000 Introduction to Animal Sciences	4
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
CHEM 1030 Fundamentals Chemistry I	3 CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1 CHEM 1041 Fundamental Chemistry II Laboratory	1
ENGL 1100 English Composition I	3 ENGL 1120 English Composition II	3
MATH 1130 Pre-Calculus Trigonometry	3	
	15	15

Sophomore

Fall	Hours Spring	Hours
BIOL 2500 Human Anatomy and Physiology I	4 BIOL 2510 Human Anatomy and Physiology II	4
ECON 2020 Principles of Microeconomics	3 COMM 1000 Public Speaking	3
HIST 1010 World History I	3 CHEM 2030 Survey of Organic Chemistry	3
Core Literature	3 HIST 1020 World History II	3
Core Social Science	3 STAT 2510 Statistics for Biological and Health Sciences	3
	16	16

Junior

Fall	Hours Spring	Hours
AGEC 4000 Principles of Agribusiness Management	3 ANSC 3400 Animal Nutrition	4
ANSC 3600 Reproductive Physiology	4 ANSC 3500 Animal Breeding	3
BCHE 3200 Principles of Biochemistry	3 ANSC 3800 Careers in Animal Science	1

BIOL 3000 Genetics	4	Approved Humanities Choice ¹	3
		Directed Elective I ²	4
	14		15

Senior

Fall	Hours	Spring	Hours
BIOL 3200 General Microbiology	4	Directed Elective II ²	4
Core Fine Arts	3	Free Electives	10
Free Electives	8	UNIV 4AA0 University Graduation	0
	15		14

Total Hours: 120

¹ Select a Core Humanities course that meets SLO 3 (such as Philosophy). See AU *Bulletin* for a listing.² Directed Electives - See advisor for approved course listings.

Curriculum in Animal Sciences Pre-Vet - Pre-Professional Option

Freshman

Fall	Hours	Spring	Hours
ANSC 1100 Orientation to Animal Sciences	1	ANSC 1000 Introduction to Animal Sciences	4
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1130 Pre-Calculus Trigonometry	3		
	15		15

Sophomore

Fall	Hours	Spring	Hours
BIOL 2500 Human Anatomy and Physiology I	4	BIOL 2510 Human Anatomy and Physiology II	4
CHEM 2070 Organic Chemistry I	3	CHEM 2080 Organic Chemistry II	3
CHEM 2071 Organic Chemistry I Laboratory	1	CHEM 2081 Organic Chemistry II Laboratory	1
HIST 1010 World History I	3	COMM 1000 Public Speaking	3
Core Literature	3	HIST 1020 World History II	3
Core Social Science	3	Core Fine Arts	3
	17		17

Junior

Fall	Hours	Spring	Hours
ANSC 3600 Reproductive Physiology	4	ANSC 3400 Animal Nutrition	4
BCHE 3200 Principles of Biochemistry	3	ANSC 3500 Animal Breeding	3
PHYS 1500 General Physics I	4	ANSC 3800 Careers in Animal Science	1
STAT 2510 Statistics for Biological and Health Sciences	3	ECON 2020 Principles of Microeconomics	3

Approved Humanities Choice ¹	3 PHYS 1510 General Physics II	4
	17	15
Senior		
Fall	Hours	Spring
BIOL 3000 Genetics	4 Directed Electives ²	4
BIOL 3200 General Microbiology	4 Directed Electives ²	3-4
Free Electives	4 Free Electives	4-5
	UNIV 4AA0 University Graduation	0
	12	11-13
Total Hours: 119-121		

Note: A minimum of 120 hours is required.

¹ Select a Core Humanities course that meets SLO 3 (such as Philosophy). See AU *Bulletin* for a listing.

² Directed Electives - See advisor for approved course listings.

Biosystems Engineering

Biosystems Engineers ensure that we have the necessities of life: safe and plentiful food to eat, pure water to drink, clean fuel and energy sources, and a safe, healthy environment in which to live. Therefore, the mission of the Department of Biosystems Engineering at Auburn University is to develop and disseminate engineering knowledge to solve problems in biological systems, natural resources and the environment. It meets the resident instruction portion of that mission through the offering of a degree program which leads to a Bachelor of Biosystems Engineering. Options in Ecological Engineering and Forest Engineering are also available under the Biosystems Engineering degree program.

The Department of Biosystems Engineering offers the only accredited degree in Biosystems Engineering in Alabama. It is committed to preparing students for productive professional careers in the biosystems industries and related natural resource and environmental systems sectors. Specific educational objectives of the Biosystems Engineering degree program are: (1) Graduates solve engineering problems such as those associated with the environment and natural resources, and the production, processing, storage, manufacture, utilization, and recycling of biological products; (2) Graduates develop solutions to problems that combine engineering and biological sciences; (3) Graduates develop environmentally and economically feasible and practical design solutions; and (4) Graduates expand the role of engineering in society; communicate effectively, practice in a professional and ethical manner; and provide leadership in the profession.

The three curriculum options (Biosystems Engineering, Ecological Engineering and Forest Engineering) are coordinated by the Samuel Ginn College of Engineering. Students should apply for admission to the Samuel Ginn College of Engineering and complete the appropriate pre-Biosystems Engineering curriculum option program.

See the Samuel Ginn College of Engineering section for curriculum model, admission and degree requirements.

Major

- Biosystems Engineering (p. 234)
- Biosystem Engineering (Ecological Engineering option) (p. 236)
- Biosystems Engineering (Forest Engineering option) (p. 233)

Entomology and Plant Pathology

Entomology and Plant Pathology enjoys a rich tradition in teaching, research and outreach activities as part of a land grant institution in Alabama. From the hiring of its first entomologist in 1896 and its first plant pathologist in 1903, the entomology and plant pathology

program at AU has grown to its present faculty of entomologists and plant pathologists with teaching, research and extension responsibilities.

As a part of the College of Agriculture, the Entomology and Plant Pathology Department offers a broad range of both basic and applied courses at the undergraduate and graduate levels, providing a sound background for students considering careers in entomology, plant pathology, and related pest management areas. The curriculum is complemented by a diversity of courses in agricultural and biological sciences offered through departments in the University. The department offers undergraduate minors in Entomology and Plant Pathology. It also offers thesis and non-thesis master's degrees and doctoral programs in these disciplinary areas.

Minors

- Entomology (p. 129)
- Plant Pathology (p. 129)

Entomolgy Minor

15 semester hours in minor (minimum 9 hours at 3000-level or above)

ENTM 3040	General Entomology	4
Elective Courses - See advisor for approved course listing.		11
Total Hours		15

Plant Pathology Minor

15 semester hours in minor

PLPA 3000	General Plant Pathology	4
Elective Courses - See advisor for approved course listing.		11
Total Hours		15

Fisheries and Allied Aquacultures

Fisheries science combines a general foundation in chemistry, mathematics and biological sciences with applied courses in the principles needed to manage fresh and saltwater aquatic resources. The degree is intended to equip students with a broad understanding of fundamental scientific principles needed to develop solutions for the increasing pressures on our aquatic resources and the need to provide safe, reliable food through aquaculture production. Through a sequence of courses, students specialize in emphasis areas of aquatic ecology, fisheries management or aquaculture. The FISH Pre-Vet/Pre-Professional area of emphasis provides students with a broad base of scientific knowledge necessary for success in the College of Veterinary Medicine, other professional schools, or graduate school. Careers for graduates include work in environmental management, fisheries resource management, extension, and commercial aquaculture production, processing, and marketing.

Majors

- Fisheries and Allied Aquacultures (p. 130)
- Fisheries and Allied Aquacultures - Pre-Professional Option (p. 131)

Minor

- Fisheries and Allied Aquacultures (p. 132)

Curriculum in Fisheries and Allied Aquacultures

(Aquaculture, Aquatic Resources Management and Fisheries Management Areas of Emphasis)

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History 1 ¹	3	Core History 2 ¹	3
MATH 1610 Calculus I	4	PHYS 1000 Foundations of Physics	4
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
FISH 1100 Fisheries Orientation	1	Free Elective	2
	15		16

Sophomore

Fall	Hours	Spring	Hours	Summer	Hours
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3	FISH 2100 Introduction to Fisheries Sciences	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1		
Core Literature	3	ECON 2020 Principles of Microeconomics	3		
Humanities Core (PHIL)	3	Fine Arts Core	3		
COMM 1000 Public Speaking	3	BIOL 3060 Ecology	4		
Elective	2				
	15		14		3

Junior

Fall	Hours	Spring	Hours
Social Science Group ²	3	CHEM 2030 Survey of Organic Chemistry	3
STAT 2510 Statistics for Biological and Health Sciences	3	Emphasis	4
Emphasis	3	FISH 5320 Limnology	3
FISH 5220 Water Science	3	FISH 5321 Limnology Laboratory	1
Free Elective	2	Directed Science Elective ³	4
	14		15

Senior

Fall	Hours	Spring	Hours
Emphasis	4	Emphasis	10
FISH 3950 Careers in Fisheries	1	Elective	3
FISH 5380 General Ichthyology	4	UNIV 4AA0 University Graduation	0
FISH 5510 Fisheries Biology and Management	4		

Elective	2	
	15	13

Total Hours: 120

¹ Student must take both courses in a sequence.

² Student will chose from the following: ANTH 1000, GEOG 1010/GEOG 1017, PSYC 2010, SOCY 1000/SOCY 1007, or UNIV 2720/UNIV 2727.

³ Direct Science Electives: ANSC 3400, BIOL 3010, BIOL 3100, BIOL 3200 or advisor approval.

Curriculum in Fisheries and Allied Aquacultures Pre-Professional Option

Pre-Professional Option

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
MATH 1610 Calculus I	4	Humanities Core (PHIL)	3
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
FISH 1100 Fisheries Orientation	1		
	16		14

Sophomore

Fall	Hours	Spring	Hours	Summer	Hours
ECON 2020 Principles of Microeconomics	3	Social Science Core ²	3	FISH 2100 Introduction to Fisheries Sciences	3
Core Literature	3	PHYS 1510 General Physics II	4		
PHYS 1500 General Physics I	4	CHEM 2080 Organic Chemistry II	3		
CHEM 2070 Organic Chemistry I	3	CHEM 2081 Organic Chemistry II Laboratory	1		
CHEM 2071 Organic Chemistry I Laboratory	1	BIOL 3060 Ecology	4		
	14		15		3

Junior

Fall	Hours	Spring	Hours
HIST Core I ¹	3	HIST Core II ¹	3
Fine Arts Core	3	COMM 1000 Public Speaking	3
Emphasis	3	STAT 2510 Statistics for Biological and Health Sciences	3
FISH 5220 Water Science	3	Science Electives	4

BCHE 3200 Principles of Biochemistry	3 Elective	2
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15	15
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Senior

Fall	Hours Spring	Hours
Emphasis	3 Emphasis	3
FISH 3950 Careers in Fisheries	1 FISH 5320 Limnology	3
FISH 5380 General Ichthyology	4 FISH 5321 Limnology Laboratory	1
FISH 5410 Introduction to Fish Health	3 Electives	2
FISH 5510 Fisheries Biology and Management	4 Science Elective	4
	UNIV 4AA0 University Graduation	0
	15	13

Total Hours: 120

¹ Student must take both courses in a sequence.

² Student will chose from the following: ANTH 1000, GEOG 1010/GEOG 1017, PSYC 2010, SOCY 1000/SOCY 1007, or UNIV 2720/UNIV 2727.

Fisheries and Allied Aquacultures Minor

Junior (03) classification is required.

15 semester hours in minor (minimum 12 hours at 4000-level or above)

Select from the following courses:

15

FISH 3950	Careers in Fisheries
FISH 5210	Principles of Aquaculture
FISH 5220	Water Science
FISH 5240	Hatchery Management
FISH 5250	Aquaculture Production
FISH 5320	Limnology
FISH 5440	Fish Anatomy and Physiology
FISH 5630	Facilities for Aquaculture
FISH 5380	General Ichthyology
FISH 5410	Introduction to Fish Health
FISH 5510	Fisheries Biology and Management
FISH 5520	Small Impoundment Management
FISH 5670	Fisheries and Aquacultures Extension Methods
FISH 5970	Topics in Fisheries and Allied Aquacultures

Total Hours

15

Horticulture

Courses prepare Horticulture graduates for the following careers: nursery manager, landscape designer, landscape installer, landscape maintenance, interior landscaping, plant propagator, city or state horticulturist, extension horticulturist, horticulture writer, horticulture

teacher, florist shop manager, greenhouse manager, vegetable producer, orchard manager, chemical company representative, seed company representative or retail garden center manager.

Four undergraduate tracks are available to students in horticulture: landscape horticulture, nursery and greenhouse science, pre-landscape architecture, and fruit and vegetable production. Horticulture offers masters' and doctoral degrees, which lead to professional positions.

Majors

- Horticulture - Fruit and Vegetable Production Emphasis (p. 133)
- Horticulture - Landscape Horticulture Emphasis (p. 134)
- Horticulture - Nursery and Greenhouse Science Emphasis (p. 136)
- Horticulture - Pre-Landscape Architecture Emphasis (p. 137)

Curriculum in Fruit and Vegetable Production Emphasis

Freshman

Fall	Hours Spring	Hours
HORT 1010 Introduction to Horticulture	1 ENGL 1120 English Composition II	3
ENGL 1100 English Composition I	3 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4 Core History Sequence II or Social Science ³	3
Core History Sequence I ¹	3 Core Fine Arts	3
Core Mathematics ²	3-4 COMM 1000 Public Speaking	3
	14-15	16

Sophomore

Fall	Hours Spring	Hours
Social Science Choice	3 HORT 2030 Vegetable Production	3
Core Literature I	3 HORT 2240 Plant Propagation	3
HORT 2010 Fruit and Nut Production	4 AGRN 2040 Basic Soil Science	4
CHEM 1030 Fundamentals Chemistry I	3 ECON 2020 Principles of Microeconomics or 2030 Principles of Macroeconomics	3
CHEM 1031 Fundamental Chemistry I Laboratory	1 Elective	3
	14	16

Junior

Fall	Hours Spring	Hours Summer	Hours
Core Literature II or Humanities Choice ⁴	3 AGECE 4000 Principles of Agribusiness Management	3 HORT 5110 Tree Fruit Culture ⁷	2
PLPA 3000 General Plant Pathology	4 ENTM 4020 Economic Entomology	4	

HORT 3000 Growth and Development of Horticultural Plants	3 HORT 5120 Small Fruit and Pecan Culture ⁶	3	
Group 1 or 2 ⁵	3-4 Group 1 or 2 ⁵	3-4	
Elective	3 Elective	3	
	16-17	16-17	2
Senior			
Fall	Hours Spring	Hours	
Group 1 or 2 ⁵	9-12 HORT 5140 Post-Harvest Biology and Technology	3	
HORT 4000 Pesticide Mgt in Hort	3 HORT 5130 Sustainable Vegetable Crop Production	3	
	Electives	2-8	
	UNIV 4AA0 University Graduation	0	
	12-15	8-14	

Total Hours: 114-126

A minimum of 120 hours is required.

- ¹ If HIST 1210/1220 are chosen, you must choose a social science course that meets SLO 9.
- ² Any core MATH course, except MATH 1100 may be chosen.
- ³ Students must complete a sequence in either core history or literature. If literature sequence is chosen, a core social science option can be chosen for this selection. Please note that if you choose the literature sequence, you will need to take an additional humanities course that meets SLO 3. This additional course will count towards your general electives.
- ⁴ Students must complete a sequence in either core history or literature. If history sequence is chosen, a humanities choice must be chosen for this selection that meets SLO 3.
- ⁵ **Group 1 (Business Emphasis):** FLSP 1010 Elementary Spanish I (4); HORT 2210 Landscape Gardening (4); ACCT 2810 Fundamentals of Accounting (3); AGECE 3010 Agribusiness Marketing (3); AGRN 3150 Turfgrass Management (4); MKTG 3310 Principles of Marketing (3); FINC 3610 Principles of Business Finance (3); HORT 3920 Horticulture Internship (4); AGECE 4070 Agricultural Law (3); HORT 4150 Retail Garden Center Management (4); HORT 4250 Intermediate Fruit and Vegetable Production (3); HORT 5230 Nursery Management (4); HORT 5240 Public Gardens Management (3).
Group 2 (Science Emphasis): PHYS 1500 General Physics (4); PHYS 1510 General Physics II (4); MATH 1610 Calculus I (4); MATH 1620 Calculus II (4); CHEM 2070 & 2071 Organic Chemistry I & Lab (4); CHEM 2080 & 2081 Organic Chemistry II & Lab (4); STAT 2510 Statistics for Biological and Health Sciences (3); STAT 2710 Statistical Computing (1); BIOL 3000 Genetics (3); CHEM 3050 & 3051 Analytical Chemistry & Lab (4); AGRN 3120 Principles of Weed Science (4); HORT 4930 Directed Study (3); HORT 4970 Special Topics (3); AGRN 5010 Analysis of Plant, Soil, and Animal Data (3); CHEM 5180 & 5181 Biochemistry I & Lab (4); CHEM 5190 & 5191 Biochemistry II & Lab (4); HORT 5910 Horticulture Practicum (3).
- ⁶ Even years only.
- ⁷ Odd years only.

Curriculum in Landscape Horticulture Emphasis

Freshman

Fall	Hours Spring	Hours
HORT 1010 Introduction to Horticulture	1 ENGL 1120 English Composition II	3
Core Mathematics ¹	3-4 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4 CHEM 1030 Fundamentals Chemistry I	3

ENGL 1100 English Composition I	3	CHEM 1031 Fundamental Chemistry I Laboratory	1
Core History Sequence I ²	3	Core History Sequence II or Social Science ³	3
	14-15		14
Sophomore			
Fall	Hours	Spring	Hours
HORT 3220 Arboriculture	4	Core Literature II or Humanities Choice ⁴	3
Core Literature I	3	COMM 1000 Public Speaking	3
ECON 2020 Principles of Microeconomics <i>or</i> 2030 Principles of Macroeconomics	3	HORT 2240 Plant Propagation	3
AGRN 2040 Basic Soil Science	4	HORT 3210 Small Trees, Shrubs and Vines	4
Social Science Choice	3		
	17		13
Junior			
Fall	Hours	Spring	Hours
HORT 3950 Careers in Horticulture	1	ENTM 4020 Economic Entomology	4
HORT 4270 Intermediate Landscape Design	3	HORT 4100 Herbaceous Ornamentals	4
Group 1 ⁵	3-4	Group 1 ⁵	3-4
PLPA 3000 General Plant Pathology	4	Core Fine Arts	3
AGRN 3150 Turfgrass Management	4		
	15-16		14-15
Senior			
Fall	Hours	Spring	Hours
HORT 3000 Growth and Development of Horticultural Plants	3	HORT 5210 Landscape Bidding, Installation and Maintenance	4
Group 1 ⁵	3-4	Group 2 ⁵	3-4
Group 2 ⁵	3-4	Electives	7-10
Electives	3-6	UNIV 4AA0 University Graduation	0
	12-17		14-18

Total Hours: 113-125

Note: A minimum of 120 hours is required.

- ¹ Any core MATH course, except MATH 1100 may be chosen.
- ² If HIST 1210/1220 are chosen, you must choose a social science course that meets SLO 9.
- ³ Students must complete a sequence in either core history or literature. If literature sequence is chosen, a core social science option can be chosen for this selection. Please note that if you choose the literature sequence, you will need to take an additional humanities course that meets SLO 3. This additional course will count towards your general electives.
- ⁴ Students must complete a sequence in either core history or literature. If history sequence is chosen, a humanities choice must be chosen for this selection that meets SLO 3.

- ⁵ **Group 1:** HORT 3110 People and Plants: A History of Gardens in the Cultural Context (3); HORT 3280 Landscape Construction (3); HORT 4000 Pesticide Management in Horticulture (3); HORT 4150 Retail Garden Center Management (3); HORT 4300 Computer Aided Planting Design (3); HORT 5220 Greenhouse Management Science (4); HORT 5230 Nursery Management (4); HORT 5240 Public Gardens Management (3); HORT 5280 Advanced Landscape Design (3); BSEN 3560 Turf Systems Irrigation Design (3); AGRN 5160 Advanced Turfgrass Management (3).
- Group 2:** STAT 2510 Statistics for Biological and Health Sciences (3); ACCT 2810 Fundamentals of Accounting (3); HORT 3920 Horticulture Internship (4); HORT 4930 Directed Study (3); HORT 5120 Small Fruit and Pecan Culture (3); HORT 5110 Tree Fruit Culture (2); HORT 5130 Sustainable Vegetable Crop Production (3); HORT 5910 Horticulture Practicum (3); AGRN 3120 Principles of Weed Science (4); CTCT 2100 Power Equipment Technology (3); PLPA 5060 Plant Disease Management (4); FLSP 1010 Elementary Spanish I (4).

Curriculum in Nursery and Greenhouse Science Emphasis

Freshman

Fall	Hours Spring	Hours
HORT 1010 Introduction to Horticulture	1 ENGL 1120 English Composition II	3
Core Mathematics ¹	3-4 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4 CHEM 1030 Fundamentals Chemistry I	3
ENGL 1100 English Composition I	3 CHEM 1031 Fundamental Chemistry I Laboratory	1
Core History Sequence I ²	3 Core History Sequence II ³	3
	14-15	14

Sophomore

Fall	Hours Spring	Hours
HORT 3220 Arboriculture	4 Core Literature II or Humanities Choice ⁴	3
Core Literature I	3 COMM 1000 Public Speaking	3
ECON 2020 Principles of Microeconomics <i>or</i> 2030 Principles of Macroeconomics	3 HORT 2240 Plant Propagation	3
AGRN 2040 Basic Soil Science	4 HORT 3210 Small Trees, Shrubs and Vines	4
Social Science Choice	3 Electives	3-4
	17	16-17

Junior

Fall	Hours Spring	Hours
HORT 3000 Growth and Development of Horticultural Plants	3 ENTM 4020 Economic Entomology	4
HORT 3950 Careers in Horticulture	1 HORT 4100 Herbaceous Ornamentals	4
Group 1 ⁵	3-4 Group 1 ⁵	3-4
PLPA 3000 General Plant Pathology	4 Core Fine Arts	3
AGRN 3150 Turfgrass Management	4	
	15-16	14-15

Senior

Fall	Hours Spring	Hours
HORT 5220 Greenhouse Management Science	4 Group 2 ⁵	3-4
HORT 5230 Nursery Management	4 Electives	7-13

Group 1 ⁵	3-4 UNIV 4AA0 University Graduation	0
Group 2 ⁵	3-4	
	14-16	10-17
Total Hours: 114-127		

Note: A minimum of 120 hours is required.

- ¹ Any core MATH course, except MATH 1100 may be chosen.
- ² If HIST 1210/1220 are chosen, you must choose a social science course that meets SLO 9.
- ³ Students must complete a sequence in either core history or literature. If literature sequence is chosen, a core social science option can be chosen for this selection. Please note that if you choose the literature sequence, you will need to take an additional humanities course that meets SLO 3. This additional course will count towards your general electives.
- ⁴ Students must complete a sequence in either core history or literature. If history sequence is chosen, a humanities choice must be chosen for this selection that meets SLO 3.
- ⁵ **Group 1:** HORT 2010 Fruit and Nut Production (4); HORT 2210 Landscape Gardening (4); HORT 3310 People and Plants: A History of Gardens in the Cultural Context (3); HORT 4000 Pesticide Management in Horticulture (3); HORT 4150 Retail Garden Center Management (3); HORT 4270 Intermediate Landscape Design (3); HORT 5210 Landscape Bidding, Installation and Maintenance (4); HORT 5240 Public Gardens Management (3); BSEN 3560 Turf Systems Irrigation Design (3).
Group 2: STAT 2510 Statistics for Biological and Health Sciences (3); HORT 3920 Horticulture Internship (4); HORT 4930 Directed Study (3); AGRN 3120 Principles of Weed Science (4); CTCT 2100 Power Equipment Technology (3); PLPA 5060 Plant Disease Management (4); FLSP 1010 Elementary Spanish I (4); FORY 5650 Urban Forestry (3); HORT 5120 Small Fruit and Pecan Culture (3); HORT 5110 Tree Fruit Culture (2); HORT 5130 Sustainable Vegetable Production (3); HORT 5910 Horticulture Practicum (3).

Curriculum in Pre-Landscape Architecture Emphasis

Students who have successfully completed the first three years of the Pre-Landscape Architecture Emphasis and who have a minimum 2.8 cumulative GPA are eligible to apply to the Landscape Architecture Summer Design Studio. Students who have successfully completed the Summer Design Studio and who are approved by the Landscape Architecture Faculty Admissions Committee are eligible to make application to the Graduate School for the Master of Landscape Architecture Program upon the completion of the fourth year. Please see the Office of Academic Affairs in the College of Agriculture for further information.

Pre-Landscape Architecture Emphasis

Freshman

Fall	Hours Spring	Hours
HORT 1010 Introduction to Horticulture	1 ENGL 1120 English Composition II	3
Core Mathematics ¹	3-4 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4 CHEM 1030 Fundamentals Chemistry I	3
ENGL 1100 English Composition I	3 CHEM 1031 Fundamental Chemistry I Laboratory	1
Core History Sequence I ²	3 Core History II or Social Science ³	3
	14-15	14

Sophomore

Fall	Hours	Spring	Hours
HORT 3220 Arboriculture		4 Core Literature II or Humanities Choice ⁴	3
HORT 3000 Growth and Development of Horticultural Plants		3 COMM 1000 Public Speaking	3
Core Literature I		3 HORT 2240 Plant Propagation	3
ECON 2020 Principles of Microeconomics or 2030 Principles of Macroeconomics		3 HORT 3210 Small Trees, Shrubs and Vines	4
AGRN 2040 Basic Soil Science	4		
	17		13

Junior

Fall	Hours	Spring	Hours	Summer	Hours
PLPA 3000 General Plant Pathology	4	ENTM 4020 Economic Entomology	4	LAND 5130 Studio I: Foundation Studio	5
AGRN 3150 Turfgrass Management	4	HORT 4100 Herbaceous Ornamentals	4	LAND 5131 Studio I: Field Studies	1
HORT 4270 Intermediate Landscape Design	3	Core Fine Arts	3	LAND 5140 History I: Landscape Modernism	3
HORT 3950 Careers in Horticulture	1	Social Science Choice	3	LAND 5150 Construction I	2
				LAND 5160 Graphic Studies I	2
				LAND 5170 Graphic Studies II	3
	12		14		16

Senior

Fall	Hours	Spring	Hours
LAND 5230 Studio II	5	LAND 5330 Studio III	5
LAND 5231 Field Studies II	1	LAND 5331 Field Studies III	1
LAND 5240 Traditions of Landscape Making	3	LAND 5340 Urban Studies I: American Urban Landscapes	3
LAND 5250 Construction II	2	LAND 5360 Dynamic Systems I: Urban Ecologies	3
LAND 5260 Graphic Studies III	3	HORT 5210 Landscape Bidding, Installation and Maintenance	4
LAND 5270 Plant Spatiality	2		
	16		16

 Total Hours: 132-133

¹ Any core MATH course, except MATH 1100 may be chosen.

² If HIST 1210/1220 are chosen, you must choose a social science course that meets SLO 9.

³ Students must complete a sequence in either core history or literature. If literature sequence is chosen, a core social science option can be chosen for this selection. Please note that if you choose the literature sequence, you will need to take and additional humanities course that meets SLO 3. This additional course will count towards your general electives.

⁴ Students must complete a sequence in either core history or literature. If history sequence is chosen, a humanities choice must be chosen for this selection that meets SLO 3.

Poultry Science

Three curriculum options are available to students in Poultry Science: 1) Poultry Production, 2) Poultry Science/Pre-Veterinary Medicine, and 3) Food Science. Each option leads to the B.S. degree in Poultry Science. Professional and free electives within each option allow students to pursue expertise in their individual areas of interest. Enrollment in a summer internship is required in all three options. A fourth option in Poultry Processing and Products, although officially listed, is in the process of being discontinued; students interested in this option should explore our Food Science option.

Majors

- Poultry Science - Food Science (p. 139)
- Poultry Science - Poultry Processing and Products (p. 140)
- Poultry Science - Poultry Production (p. 142)
- Poultry Science - Pre-Veterinary Medicine Option (p. 143)

Minor

- Poultry Science (p. 145)

Curriculum in Food Science

This option is designed to develop technical, analytical, and communication skills, as well as provide a broad scientific foundation to prepare students for employment within the food industry or admittance into graduate school. Upper-level food science courses address the chemical, physical, and biological properties of foods and how these properties influence food processing, quality, and safety. This undergraduate food science program is formally approved by the Institute of Food Technologists. Graduates in food science find employment in quality assurance, product development, food safety, and technical sales.

Food Science Option

Freshman

Fall	Hours	Spring	Hours
Core Fine Arts	3	COMP 1000 Personal Computer Applications	2
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4
FDSC 1000 Introductory Food Science	3	NTRI 2000 Nutrition And Health	3
	17		16

Sophomore

Fall	Hours	Spring	Hours
Core History 1	3	Core History 2	3
Core Social Science ¹	3	ECON 2020 Principles of Microeconomics	3
Core Literature	3	PHYS 1000 Foundations of Physics	4

COMM 1000 Public Speaking	3	CHEM 2030 Survey of Organic Chemistry	3	
POUL 1000 Introductory Poultry Science	3	Free Elective	3	
	15		16	
Junior				
Fall	Hours	Spring	Hours	Summer
BCHE 3200 Principles of Biochemistry	3	BIOL 5660 Food Microbiology	5	FDSC 4920 Food Science Internship
BIOL 3200 General Microbiology	4	FDSC 5430 Food Chemistry	4	
FDSC 5770 Food Plant Sanitation	4	FDSC 5730 Sensory Evaluation	3	
POUL 5140 Poultry Processing and Products <i>or</i> ANSC 4700 Meat Processing	4	Food Science Electives or ROTC ²	4	
	15		16	3
Senior				
Fall	Hours	Spring	Hours	
BSEN 5550 Principles of Food Engineering Technology	4	Humanities Core (PHIL)	3	
FDSC 5450 Food Analysis and Quality Control	4	FDSC 4290 Professional Development in Food Science	1	
STAT 2510 Statistics for Biological and Health Sciences	3	FDSC 5640 Food Product Development	4	
Food Science Elective or ROTC ²	3	POUL 5160 Principles of Food Safety	3	
		Food Science Electives or ROTC ²	3	
		UNIV 4AA0 University Graduation	0	
	14		14	

Total Hours: 126

¹ Any Social Science may be taken if HIST 1010/HIST 1020 are taken. If HIST 1210/HIST 1220 are taken, students must select one of the following Social Science courses: ANTH 1000, GEOG 1010, PSYC 2010, SOCY 1000, or UNIV 2720.

² For food science electives, see advisor for approved list.

Curriculum in Poultry Processing and Products

This option is in the process of being discontinued because of significant similarities to the Food Science option. The deletion of this option has already been approved at the university level.

Freshman

Fall	Hours	Spring	Hours
Core Social Science ¹	3	Core Fine Arts	3
CHEM 1030 Fundamentals Chemistry I	3	COMP 1000 Personal Computer Applications	2
CHEM 1031 Fundamental Chemistry I Laboratory	1	COMM 1000 Public Speaking	3

MATH 1130 Pre-Calculus Trigonometry	3	CHEM 1040 Fundamental Chemistry II	3
ENGL 1100 English Composition I	3	CHEM 1041 Fundamental Chemistry II Laboratory	1
POUL 1000 Introductory Poultry Science	3	ENGL 1120 English Composition II	3
	16		15

Sophomore

Fall	Hours	Spring	Hours
Core History 1	3	Core History 2	3
Humanities Core (PHIL)	3	ECON 2020 Principles of Microeconomics	3
Core Literature	3	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	CHEM 2030 Survey of Organic Chemistry	3
POUL 3030 Commercial Poultry Production	4	Free Elective	3
	17		16

Junior

Fall	Hours	Spring	Hours	Summer	Hours
PHYS 1000 Foundations of Physics	4	BIOL 5660 Food Microbiology	5	POUL 4920 Poultry Science Internship	3
BCHE 3200 Principles of Biochemistry	3	POUL 3150 Poultry Physiology	4		
BIOL 3200 General Microbiology	4	FDSC 5150 Food Laws And Regulations	3		
Processing Course ²	3-4	PPP Support Course ²	3-4		
	14-15		15-16		3

Senior

Fall	Hours	Spring	Hours
BSEN 5550 Principles of Food Engineering Technology	4	FDSC 5430 Food Chemistry	4
STAT 2510 Statistics for Biological and Health Sciences	3	POUL 5160 Principles of Food Safety	3
FDSC 5450 Food Analysis and Quality Control	4	Processing Course ²	4
Processing Course ²	3-4	PPP Support Course ²	3-4
		UNIV 4AA0 University Graduation	0
	14-15		14-15

Total Hours: 124-128

Note: A minimum of 126 hours is required.

- ¹ Any Social Science may be taken if HIST 1010/HIST 1020 are taken. If HIST 1210/HIST 1220 are taken, students must select one of the following Social Science courses: ANTH 1000, GEOG 1010, PSYC 2010, SOCY 1000, or UNIV 2720.
- ² For support courses and processing courses, see advisor for approved list.

Curriculum in Poultry Production

This option is designed to develop technical, analytical, communication, business, and management skills needed for advancement to leadership positions in poultry production and allied agricultural industries. Graduates will be able to apply their knowledge of science, economics, business, and ethics to identify, analyze and responsibly address challenges associated with modern poultry production. Relevant courses in poultry processing and products are also included in this curriculum option.

Poultry Production Option

Freshman

Fall	Hours	Spring	Hours
COMP 1000 Personal Computer Applications	2	Humanities Core (PHIL)	3
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1130 Pre-Calculus Trigonometry	3	Core Social Science ¹	3
POUL 1000 Introductory Poultry Science	3	COMM 1000 Public Speaking	3
	15		16

Sophomore

Fall	Hours	Spring	Hours
Core History 1	3	Core History 2	3
Core Fine Arts	3	ECON 2020 Principles of Microeconomics	3
Core Literature	3	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	CHEM 2030 Survey of Organic Chemistry	3
POUL 3030 Commercial Poultry Production	4	Free Elective	3
	17		16

Junior

Fall	Hours	Spring	Hours	Summer	Hours
PHYS 1000 Foundations of Physics	4	BCHE 3200 Principles of Biochemistry	3	POUL 4920 Poultry Science Internship	3
STAT 2510 Statistics for Biological and Health Sciences	3	POUL 3060 Poultry Breeding, Fertility, and Hatchability	4		
BIOL 3200 General Microbiology	4	POUL 3150 Poultry Physiology	4		

POUL 5140 Poultry Processing and Products	4	Professional Electives ²	4	
	15		15	3
Senior				
Fall	Hours Spring		Hours	
AGEC 4000 Principles of Agribusiness Management	3	Select one of the following:	3	
POUL 5050 Poultry Feeding	4	COMM 2410 Small Group Communication		
Professional Electives ²	7	ENGL 3040 Technical Writing		
		ENGL 3080 Business Writing		
		POUL 5080 Poultry Health	3	
		POUL 5160 Principles of Food Safety	3	
		Free Elective	2	
		Professional Electives ²	4	
		UNIV 4AA0 University Graduation	0	
	14		15	

Total Hours: 126

¹ Any Social Science may be taken if HIST 1010/HIST 1020 are taken. If HIST 1210/HIST 1220 are taken, students must select one of the following Social Science courses: ANTH 1000, GEOG 1010, PSYC 2010, SOCY 1000, or UNIV 2720.

² For professional electives see advisor for approved list.

Curriculum in Poultry Science/Pre-Veterinary Medicine

This option is designed to develop the technical, analytical, and communication skills, as well as provide the broad scientific foundation, needed for success in post-graduate degree programs, such as the Doctor of Veterinary Medicine, Master of Science, Doctor of Philosophy or other post-graduate professional degrees. Completion of this option will also prepare graduates for technical and research positions in the poultry and allied industries. Courses listed for the first six semesters satisfy requirements for admission to the College of Veterinary Medicine. Completion of the remaining requirements or successful completion of one year in the College of Veterinary Medicine or Pharmacy School entitles the student to a B.S. degree in poultry science.

Poultry Science/Pre-Veterinary Medicine Option

Freshman

Fall	Hours Spring		Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
CHEM 1030 Fundamentals Chemistry I	3	COMP 1000 Personal Computer Applications	2
CHEM 1031 Fundamental Chemistry I Laboratory	1	Core Fine Arts	3
MATH 1130 Pre-Calculus Trigonometry	3	CHEM 1040 Fundamental Chemistry II	3
POUL 1000 Introductory Poultry Science	3	CHEM 1041 Fundamental Chemistry II Laboratory	1

ENGL 1100 English Composition I	3
14	16

Sophomore

Fall	Hours Spring	Hours
Core History 1	3 Core History 2	3
ENGL 1120 English Composition II	3 Humanities Core (PHIL)	3
CHEM 2070 Organic Chemistry I	3 ECON 2020 Principles of Microeconomics	3
CHEM 2071 Organic Chemistry I Laboratory	1 CHEM 2080 Organic Chemistry II	3
POUL 3030 Commercial Poultry Production	4 CHEM 2081 Organic Chemistry II Laboratory	1
Core Social Science ¹	3 PHYS 1500 General Physics I	4
	17	17

Junior

Fall	Hours Spring	Hours Summer	Hours
Core Literature	3 BIOL 3200 General Microbiology	4 POUL 4920 Poultry Science Internship	3
BCHE 3200 Principles of Biochemistry	3 COMM 1000 Public Speaking		3
PHYS 1510 General Physics II	4 ANSC 3400 Animal Nutrition		4
POUL 5140 Poultry Processing and Products	4 POUL 3150 Poultry Physiology		4
PreVet Science Elective ²	3-4		
	17-18	15	3

Senior

Fall	Hours Spring	Hours
POUL 5050 Poultry Feeding	4 POUL 3060 Poultry Breeding, Fertility, and Hatchability	4
STAT 2510 Statistics for Biological and Health Sciences	3 POUL 5080 Poultry Health	3
Free Elective	6-7 POUL 5160 Principles of Food Safety	3
	Free Elective	3
	UNIV 4AA0 University Graduation	0
	13-14	13

Total Hours: 125-127

Note: A minimum of 126 hours is required.

¹ Any Social Science may be taken if HIST 1010/HIST 1020 are taken. If HIST 1210/HIST 1220 are taken, students must select one of the following Social Science courses: ANTH 1000, GEOG 1010, PSYC 2010, SOCY 1000, or UNIV 2720

² For the Pre-veterinary elective, see advisor for the approved list.

Poultry Science Minor

15 semester hours in minor (minimum 12 hours at 3000-level or above)

POUL 1000	Introductory Poultry Science	3
POUL 3030	Commercial Poultry Production	4
Elective Courses - See advisor for approved course listing.		8
Total Hours		15

Majors

Minors

Agricultural Leadership Studies Minor

18 semester hours in minor (minimum 9 hours at 3000-level or above)

AGRI 3800	Agricultural Leadership Development	2
AGRI 5840	Advanced Agricultural Leadership Development	3
ANSC 4800	Issues in Animal Agriculture	2
POLI 2100	State and Local Government	3
Elective Courses - See advisor for approved course listing.		8
Total Hours		18

College of Architecture, Design, and Construction

VINI NATHAN, *Dean*

KAREN L. ROGERS, *Associate Dean for Graduate Studies and External Affairs*

THE COLLEGE OF ARCHITECTURE, DESIGN AND CONSTRUCTION (CADC) is committed to preparing professionals in the design and construction industries through professional undergraduate programs in the academic areas of Architecture, Building Science, Environmental Design, Graphic Design, Industrial Design and Interior Architecture and through graduate professional programs in Building Science, Community Planning, Industrial Design, Integrated Design and Construction, Landscape Architecture, and Real Estate Development. Collaboration, community engagement, innovation, global connection and critical practice are core values intertwined in all of the programs at the College of Architecture, Design and Construction. Whether working with nationally respected corporations in the Department of Industrial and Graphic Design, associating with major construction companies in the McWhorter School of Building Science, or building facilities to accommodate the needs of some of the state's underserved citizens at the School of Architecture, Planning, and Landscape Architecture's Rural Studio, CADC students learn in unique and flexible settings from innovative faculty and through progressive pedagogical models.

The College of Architecture, Design and Construction maintains the right to limit enrollment in all programs and may retain student work for exhibition or for records and accreditation purposes. CADC students in the professional programs are required to pay the CADC Professional Fee during each semester of the professional curriculum.

Majors

- Architecture
 - Architecture (Foundation Unit) (p. 156)
 - Architecture (Summer Design) (p. 157)
- Interior Architecture

- Architecture/Interior Architecture (Foundation Unit) (p. 159)
- Architecture/Interior Architecture (Summer Design) (p. 161)
- Building Science (p. 152)
- Environmental Design (p. 163)
- Environmental Design - Pre-Landscape Architecture (p. 165)
- Graphic Design (p. 148)
- Industrial Design (p. 150)
- Post-Baccalaureate Environmental Design (p. 148)

Program

- Building Science - MBC (p. 488)
- Community Planning - MCP (p. 495)
- Industrial Design - MID (p. 518)
- Integrated Design & Construction - MIDC (p. 520)
- Landscape Architecture - MLA (p. 522)
- Real Estate Development - MRED (p. 542)

Department of Industrial and Graphic Design

Graphic Design Academic Standards

Students pursuing the bachelor of fine arts degree (BFA) in graphic design (GDES) will enroll in the College of Architecture, Design and Construction as Pre-Graphic Design (PGDE) majors for the first year level curriculum.

Acceptance and Progression into the Professional Graphic Design Program

The program maintains the right to limit freshmen and transfer enrollment. Admission into the BFA in graphic design is selective, is limited, and is based on a multiple step process.

1. **Application for Pre-Graphic Design:** Once accepted to Auburn University, students who indicate pre-graphic design as their major complete and submit the Pre-Graphic Design Freshmen Admission Application by the deadline stated on the application form. Accepted students will be designated as Pre-Graphic Design (PGDE) for the first year of the curriculum. Entering freshmen admitted to Auburn who are admitted as PGDE to the major must begin their program of study in the fall or spring term of the academic year after they are admitted, or they will be held to the same admission requirements as transfer students. Entering freshmen who are not admitted into Pre-Graphic Design may consider other programs in the college and should communicate with the CADC Office of Student Services to discuss options.
2. **PGDE to GDES second year level Courses:** After completing the first year level Pre-Graphic Design curriculum, an admission process based on GPA ranking admits qualified students into the Graphic Design second year level program for the GDES 2210 and GDES 2220 courses. Once accepted into the second year level Graphic Design major, the students will be classified as GDES and be considered probationary. The admissions process into the second level GDES program is as follows: Pre-Graphic Design students must complete at least 28 semester hours of credit including: GDES 1110 Foundation Drawing; GDES 1210 Foundation Design I; GDES 1220 Foundation Design II; two courses from the sequence ARTS 1710, ARTS 1720, ARTS 1730 Art History I, II, III; and at least 6 hours of coursework counting toward the University Core Curriculum. The GPA for entrance to the second level of Graphic Design will be calculated on the above listed courses only. (The two highest Core grades will be utilized.) [Grades received at other institutions in courses that have been accepted by Auburn, as Core or fundamental art course requirements, will be included in the GPA.] Following completion of the above listed courses, PGDE students will submit an Application to BFA in Graphic Design Degree Program to the CADC Office of Student Services. Students will be ranked by GPA and the top students will be selected. These students will be notified and then registered in the next level courses – GDES 2210 Graphic Processes and GDES 2220 Typographics I, by CADC Office of Student Services. Students who are not accepted can reapply in following semesters.

3. **B.F.A in Graphic Design Entrance Review** All probationary second-year level GDES students who have achieved a minimum 2.50 GPA in GDES 2210 and GDES 2220 are eligible to apply through a portfolio review process for GDES 2230. The Graphic Design Review Committee will conduct an entrance review twice per academic year, at the end of fall semester and at the end of spring semester. To advance to GDES 2230, it is required that students submit an unofficial transcript showing the required GPA, a portfolio of work from GDES 2210 and GDES 2220, and a one page typewritten statement of intent. The portfolio will consist of 6 projects from the two courses (no more than four projects from one course). The statement of intent should include reasons for choosing the Graphic Design major and address career goals. The Graphic Design Review Committee will evaluate the student's portfolio and written statement in terms of the individual student's skills, artistic perception, conceptualization, and professionalism. Upon successful admission by portfolio review, the student will be required to purchase a laptop computer that meets minimum specifications and will be allowed to register for 3000-level courses.

Continuation in the Program

All required coursework must be completed with a grade of C or better. In the event a grade of D or F is received in any required course in the major, a review is required for continuance in the program. Based on the outcome of this review, a student may be required to repeat the course or may not be allowed to continue in the program. Students receiving a second D or F will be reviewed for continuance in the program. Similarly, a student receiving two or more grades of C in required classes may be reviewed for continuance in the program.

Transfer Students for Graphic Design

The Graphic Design (GDES) program maintains the right to limit transfer enrollment based on available resources. On and off-campus transfer students must file a GDES Transfer Student Admission Application and meet criteria listed in the application with the CAD/C Office of Student Services no later than the posted deadline.

A student must have a minimum cumulative unadjusted GPA of 2.8 (on a 4.0 scale) on all collegiate work attempted and will be accepted on a space-available basis as determined by the department head.

On and off campus transfer applicants must meet criteria listed in the "Academic Policies" section of the *Auburn University Bulletin*. The application packet includes an application form, statement of intent, and official transcripts from all schools attended. A portfolio is required for consideration of transfer credit for any studio classes taken. Applicants must be admitted to Auburn University at the time of application. Screening of applications for fall admission begins in March with applicants notified by April 15. Screening of applications for Spring admission begins in October with applicants notified by November 15. Students admitted MUST begin the program the following term. Course work in the major must be taken in sequence; transfer students should anticipate that additional semesters of study may be required to complete the program.

Industrial Design Academic Standards

The required INDD First Year Studio summer sequence is offered to students in good standing who meet the following criteria: completion of 24 credit hours of university work or with approval of the Department Head. Students are not required to have completed the INDD freshman model curriculum before enrolling in the summer semester INDD First Year Studio. The First Year Studio sequence is only offered in the summer semester.

Acceptance and Progression in the Professional Industrial Design Program

The department maintains the right to select the most highly qualified students for admission to and for continuation in the INDD professional program. Enrollment is restricted in upper-level professional INDD studios (second, third, and fourth year) and based on INDD GPA. Students not admitted into an upper level professional INDD studio may retake the summer studio sequence in subsequent years and are re-ranked against new applicants and available resources in that year level. The department reserves the right to retain original work accomplished as part of course instruction.

After a student is accepted into the summer semester First Year Studio, they must make at least a grade of C or higher in studio courses in order to be considered for progression in the program. Grades below C in studio courses 1310 through 4210 must be repeated. Design courses must be taken in sequence unless otherwise approved by the department head. A portfolio and presentation are required for graduation.

Special Opportunities for Qualified Students

The Department of Industrial and Graphic Design Study Abroad programs are design experiences, with students sharing studios and workshops at colleges and universities in England, Ireland, Northern Ireland, Scotland, and Taiwan, Hong Kong.

Transfer Students for Industrial Design

Please contact the department head of Industrial and Graphic Design for information on transferring into Industrial Design.

Majors

- Graphic Design (p. 148)
- Industrial Design (p. 150)
- Post-Baccalaureate Environmental Design (p. 148)

Curriculum in Environmental Design - Post-Baccalaureate Industrial Design

The bachelor of science in environmental design – post baccalaureate industrial design (EVDI-Post Bacc) is a NASAD accredited 43 hour program and is required for admission to the industrial design master's program by students who do not hold a bachelor's degree in industrial design. Students holding a previous bachelor's degree must have a 2.5 GPA are eligible to apply for the post baccalaureate degree. At the end of the bachelor of science in environmental design – post baccalaureate industrial design course students who choose not to pursue or who do not pass the Post Baccalaureate Review for admission to the master of industrial design program, can be awarded the bachelor of science in environmental design but must pursue careers elsewhere.

Bachelor of science in environmental design – post baccalaureate students seeking admission to the master of industrial design must maintain a 3.0 in all Industrial Design courses, and apply to the Graduate School during the first weeks of spring semester. During the last week of spring semester bachelor of science in environmental design – post baccalaureate students who are master of industrial design candidates must prepare for the Post Baccalaureate Review (display of representative work from all Industrial Design classes taken). Students who fail the review are given additional course requirements to be completed before a second and last review can be scheduled. Once the Post Baccalaureate Review is successfully completed and the bachelor of science in environmental design – post baccalaureate degree awarded, students can proceed with their application to the Graduate School.

Curriculum in Environmental Design – Post-Baccalaureate Industrial Design

If a bachelor of science in environmental design degree is/was received, a graduate must apply for re-admission to be a candidate for any other degree offered by the college. Please contact the CAD/C Office of Student Services for more information on this degree option and curriculum.

Fall	Hours Spring	Hours Summer	Hours
INDD 2110 Two Dimensional Industrial Design Principles	6 INDD 3210 Product Design	6 INDD 1310 Synthesis of Drawing	10
INDD 2120 Computer and Design Communications	3 INDD 3220 Materials and Technology	3 INDD 1320 Prototype Fabrication	3
INDD 2130 Presentation Rendering	3 INDD 2220 Anthropometry	3 INDD 5960 Special Problems	1-5
INDD 3120 Industrial Design Methods	3 INDD 5960 Special Problems	1-5	
	UNIV 4AA0 University Graduation	0	
	15	13-17	14-18

Total Hours: 42-50

INDD/BSEV-POST BACC EVDI Admission required - See Advisor for details.

Curriculum in Graphic Design

The Graphic Design program in the Department of Industrial and Graphic Design prepares students to practice visual communication in a competitive global environment. Graphic Design students follow a curriculum that provides variety and depth in all aspects of the field, supported by Fine Arts electives. Varied career opportunities range from the development of strategies to implement large-scale communications campaigns, to the design of effective communication products such as magazines, logo and identity development,

interactive media, web design, packaging, exhibitions, illustration, and environmental graphics. Graphic design students have excellent opportunities for internship and cooperative education experiences as a result of well established relationships with regional, national and international companies and firms.

Curriculum in Graphic Design

Please see CAD/C advisors in the Office of Student Services for the most current 2012-2013 GDES curriculum model.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
GDES 1110 Foundation Drawing		4 Core Science I ⁵	4
GDES 1210 Foundation Design I		4 GDES 1220 Foundation Design II	4
ARTS 1710 Introduction to Art History I		3 ARTS 1720 Introduction to Art History II	3
	14		14

Sophomore

Fall	Hours	Spring	Hours
Core Literature I (Humanities) ¹		3 Core Literature II (Humanities) ¹	3
Core Social Science ³		3 Core Social Science ³	3
GDES 2210 Graphic Processes		4 GDES 2230 Introduction to Graphic Design	4
GDES 2220 Typography I		4 Art History/Art/Design Elective	3
ARTS 1730 Introduction to Art History III		3 Art History/Art/Design Elective	3
	17		16

Junior

Fall	Hours	Spring	Hours
Core Math		3 Core History (Core Social Science)	3
Core Science II ⁴		4 GDES 3210 Photo Design, 4640 Image I, <i>or</i> 4650 Image II	4
GDES 3240 Interactive Media		4 GDES 4240 Graphic Design I	4
GDES 3710 Graphic Design History		4 Art History/Art/Design Elective	3
		Art History/Art/Design Elective	3
	15		17

Senior

Fall	Hours	Spring	Hours
Core Social Science ³		3 Core Humanities (Philosophy) ²	3
Core Fine Arts (Humanities)		3 GDES 4990 Senior Project for Graphic Des ⁶	5
GDES 4250 Graphic Design II		4 GDES 4991 Research, Writing and Presentation	1
Graphic Design Electives		4 Graphic Design Electives	4
Elective		3 UNIV 4AA0 University Graduation	0
	17		13

Total Hours: 123

See advisor for approved course listing.

- ¹ For Core students must complete one approved sequence, either in Literature or History
- ² Satisfies SLO 3 (PHIL 1100, PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090 or comparable Honors course or HONR 1007, HONR 1017).
- ³ Any Core Social Science course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices.
- ⁴ Any Core Humanities course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices.
- ⁵ Students must complete a sequence of Science courses.
- ⁶ Satisfies SLO 7, Oral Communication.

Curriculum in Industrial Design

Students of Industrial Design learn the basic principles of design, engineering, human factors, marketing and sociology. They acquire such technical skills as computer-aided design and drafting, prototype fabrication, photography, sketching and graphics techniques. Students are introduced to design methods, color theory, product planning, visual statistics, materials, manufacturing methods, consumer psychology and environmental studies.

The four and a half year (nine semester) curriculum, which is accredited by the National Association of Schools of Art and Design, leads to the professional degree of bachelor of industrial design. Graduates will qualify for positions in industrial design consultant offices and in various industries. Motivated students will be considered for admission to the Graduate Program in industrial design. The Cooperative Education Program is offered at the completion of the second year of studio. A one semester internship experience is recommended before enrollment in the fourth year studio sequence.

Curriculum in Industrial Design

Freshman

Fall	Hours	Spring	Hours	Summer	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3	INDD 1310 Synthesis of Drawing ⁷	10
HIST 1210/1217 Technology and Civilization I	3	HIST 1220/1227 Technology And Civilization II	3	INDD 1320 Prototype Fabrication ⁷	3
Core Mathematics	3	Core Science ⁵	4	INDD 1400 Careers in Industrial Design ⁷	2
INDD 1120 Industrial Design in Modern Society	3	Core Fine Arts (Humanities)	3	After successful completion of this studio sequence, the top 45 students, based on grade point averages accumulated during the summer semester, are allowed to proceed into the fall semester industrial design professional program.	
Free Elective	1				
	13		13		15

Sophomore

Fall	Hours	Spring	Hours
Core Science ⁵	4	Core Social Science ³	3
INDD 2110 Two Dimensional Industrial Design Principles	6	INDD 2210 Three Dimensional Industrial Design Principles	6
INDD 2120 Computer and Design Communications	3	INDD 2220 Anthropometry	3
INDD 2130 Presentation Rendering	3	INDD 2230 History of Industrial Design	3
	16		15

Junior

Fall	Hours	Spring	Hours
Core Humanities ⁴	3	Core Social Science ³	3
INDD 3110 Exhibit and Packaging	6	INDD 3210 Product Design	6
INDD 3120 Industrial Design Methods	3	INDD 3220 Materials and Technology	3
INDD 3130 Basic Photography for Industrial Design	3	INDD 3230 Advanced Computer Aided Design	3
	15		15

Senior

Fall	Hours	Spring	Hours
Core Literature (Humanities) ¹	3	Core Humanities (Philosophy) ²	3
INDD 4110 Advanced Product Design	6	INDD 4210 Industrial Design Thesis	6
INDD 5120 Professional Portfolio	3	INDD 4220 Professional Practice	3
		UNIV 4AA0 University Graduation	0
	12		12

Total Hours: 126

¹ For Core students must complete the approved sequence, HIST 1210/HIST 1217 and HIST 1220/HIST 1227.

² Satisfies SLO 3 (PHIL 1100, PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090 or comparable Honors course or HONR 1007, HONR 1017)

³ Any Core Social Science course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices

⁴ Any Core Humanities course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices

⁵ Students must complete a sequence of Science courses

⁶ Satisfies SLO 7, Oral Communication

McWhorter School of Building Science

Students in the Building Science program learn the basic principles of science, architecture, engineering, business and construction. The four-year curriculum leads to the bachelor of science in building construction, accredited by the American Council for Construction Education. Graduates qualify for positions in all areas of the construction industry.

Students must maintain professional standards of behavior, as outlined in the Student Policy eHandbook, at all times while on university property and while participating in school-sponsored trips, events, and activities. Failure to do so may be grounds for dismissal from the program.

The Cooperative Education Program is offered after completion of two semesters of study at Auburn.

Non-majors will be accepted in BSCI classes on a space-available basis.

Building Science is a multi-disciplinary program which combines a significant technical education with a broad background in business management related to construction. Auburn's construction program is unique due to its leading edge information technology applications emphasis. This combination provides graduates a comprehensive foundation for success.

Entering Freshmen who meet the general admission requirements of Auburn University will be admitted to the Pre-Building Science program. Transfer students (external) may enter the Pre-Building Science program during fall, spring or summer semester and will be accepted on a space-available basis as determined by the school head. Minimum grade point average of 2.60 is required in 32 semester hours including English, History, Math (Calculus I), and a Natural Science with a lab (Trig-based Physics with lab) required in the first year of the model curriculum. Internal transfer students must have a 2.60 GPA (cannot be a gapped GPA).

Building Science Academic Standards and Policies

To be considered for admission into the professional Building Science program (BSCI), the student must have completed all Pre-Building Science course work shown in the first two years of the BSCI model curriculum, and must have successfully completed a minimum of 63 semester hours. The school reserves the right to limit enrollment in the professional program (BSCI) based on calculated GPA and on available resources. It is possible to have less than the available number of positions filled if applicants do not have a 2.40 formula GPA.

For the fall and summer semesters, thirty students are chosen in rank order based upon the formula GPA calculation described in the Building Science Academic Standards and based upon a minimum 2.40 formula GPA. Exceptions to this minimum GPA are only available through the school head, and shall be only considered with extenuating circumstances. Please see a CAD/C advisor for a full copy of the BSCI Academic Standards. Repeat applicants will be evaluated based upon grades received in all 21 courses that comprise the Pre-Building Science curriculum. For the spring semester, sixty students are chosen in rank order based upon the formula GPA calculation described in the Building Science Academic Standards and based upon a minimum 2.40 formula GPA. Repeat applicants are evaluated based upon grades received in all 21 courses that compose the Pre-Building Science curriculum. No preference will be given to either first-time or repeat applicants.

After being admitted into the professional program, any student receiving a grade below C in any 3000- or 4000-level BSCI course, or any student whose cumulative GPA falls below 2.50, will be reviewed by the School Academic Standards Committee for approval to continue in the program. Any student who is reviewed may be required to repeat a course or to withdraw from the program.

Major

- Building Science (p. 152)

Curriculum in Building Science

Freshman

Fall	Hours Spring	Hours
BSCI 1100 Introduction to Construction	3 BSCI 2300 Construction Methods and Materials	3
MATH 1150 Pre-Calculus Algebra and Trigonometry or 1610 Calculus I	4 BSCI 2100 Introduction to Sustainable Construction	1
ENGL 1100 English Composition I	3 ENGL 1120 English Composition II	3
HIST 1010 World History I or 1017 Honors World History I	3 HIST 1020 World History II or 1027 Honors World History II	3
PHIL 1040 Business Ethics	3 PHYS 1500 General Physics I	4
	16	14

Sophomore

Fall	Hours Spring	Hours
BSCI 2400 Structure of Buildings	3 BSCI 2200 Construction Communication	3
ECON 2030 Principles of Macroeconomics	3 Core Literature I	3
ACCT 2810 Fundamentals Of Accounting	3 Math or Science Elective ¹	3
PHYS 1510 General Physics II	4 ECON 2020 Principles of Microeconomics	3
Fine Arts Core	3 COMM 1000 Public Speaking	3
	16	15

Junior

Fall	Hours	Spring	Hours	Summer	Hours
BSCI 3420 Structures for Builders II: Wood, Steel, etc.	4	BSCI 3430 Structures for Builders III: Soils and Concrete	4	BSCI 3300 Field Surveying ⁵	2
BSCI 3600 Project Controls I	4	BSCI 3650 Project Controls II	4		
BSCI 3500 Construction Information Technology	4	BSCI 4700 Mechanical Systems in Buildings	3		
BSCI 3700 Construction Safety Hoisting	3	MNGT 3810 Management Foundations	3		
		ENGL 3040/3080 Technical Writing	3		
	15		17		2

Senior

Fall	Hours	Spring	Hours
BSCI 4750 Electrical Systems in Buildings	3	BSCI 4850 Construction Law and Risk Management	3
BSCI 4600 Project Controls III	4	BSCI 4990 Building Science Thesis	4
BSCI 4601 Project Controls III CIT Lab	1	Construction Management Elective ⁴	3
BSCI 4800 Contracting Business	4	Business and Management Elective ²	3
Construction Elective ³	3	UNIV 4AA0 University Graduation	0
	15		13

Total Hours: 123

¹ CHEM 1010 w/lab, CHEM 1030, w/lab, CHEM 1110 w/lab; GEOL 1100 w/lab; SCMH 1010, STAT 2010, STAT 2510; MATH 1610, MATH 1620, MATH 1680, or MATH 1710 (only if student has taken MATH 1150); MATH 1150 (only if student has taken MATH 1610)

² FINC 2400, FINC 3200, FINC 3250, FINC 3810, or MKTG 3810

³ BSCI 4410, BSCI 4710, BSCI 4860, BSCI 4870, BSCI 4880, BSCI 4890, BSCI 5450, BSCI 5830, BSCI 5840

⁴ BSCI 4410, BSCI 4710, BSCI 4860, BSCI 4870, BSCI 4880, BSCI 4890, BSCI 5450, BSCI 5830, BSCI 5840

⁵ BSCI 3300 Field Surveying is required for all students accepted to the Professional Program (Fall, Spring, and Summer). For students accepted for the fall and summer semesters, the course will be taken during the break between Summer and Fall semesters. For students accepted for the spring semester, the course will be taken during the break between Spring and Summer Semesters. Credit for the course will be given **Summer semester after completing the course. All students MUST** take the course during the designated time.

School of Architecture, Planning, and Landscape Architecture

The bachelor of architecture degree is awarded upon the completion of the five-year curriculum. Qualified students may elect to pursue concurrently a second bachelor of interior architecture degree.

In the United States, most state registration boards require a degree from an accredited professional degree program as a pre-requisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a six, three or two-year term of accreditation, depending on its degree of conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, that when earned sequentially, constitute an accredited professional education. However, the pre-

professional degree is not, by itself, recognized as an accredited degree. Auburn's next accreditation visit for the architecture program is in 2017.

Auburn University, School of Architecture, Planning, and Landscape Architecture offers the following NAAB-accredited degree program: Bachelor of Architecture (159 credits). The four-year pre-professional Bachelor of Science in Environmental Design is not a professionally accredited degree.

Auburn University is a member of the Association of Collegiate Schools of Architecture.

Students are encouraged to work at an architect's office, on a construction site or in another approved professional endeavor prior to their fourth year.

The bachelor of interior architecture degree program offers a holistic approach to design that focuses on the relationship between interior and exterior space. Interior Architecture students develop enhanced critical thinking abilities in relation to the construction of space, progressive materiality, sustainability, and representation. Auburn has integrated Interior Architecture and Architecture in this unique program resulting in the granting of two degrees upon completion of the fifth year of study. It is not possible to get the undergraduate degree in interior architecture without the dual Architecture professional degree. Architecture students must apply separately to the Interior Architecture Program through a competitive application process. The graduate who receives a bachelor of interior architecture degree and a bachelor of architecture degree is a person trained in interior architecture and architecture who is qualified to sit for an Architectural License Exam after completing IDP and then sit for the NCIDQ Exam for Interiors, based on a transcript review. See advisor for details.

Architecture Academic Standards and Policies

Enrollment in the second year studios is limited and eligibility for acceptance to Architecture and Interior Architecture is based on performance in courses in the first year of the model curriculum. The Architecture Program offers two options for completing the Pre-Architecture first year of the model curriculum: the Foundation Unit Studio sequence and the Summer Design Studio sequence. Placement of Pre-Architecture students into either of these entry sequences is determined by an Architecture Program committee. Information regarding the entry sequence placement process will be mailed to all Pre-Architecture students who have been admitted to Auburn on or before February 1 preceding fall term entry. Students not participating in the Foundation Unit Studio have the opportunity to be selected to enter the design studio sequence in the summer term after their first year of enrollment. Placement in the Foundation Unit Studio Sequence will be communicated prior to Camp War Eagle. Pre-Architecture students must receive an "S" in ARCH 1000, ARCH 1010, and ARCH 1060 prior to being admitted to the ARCH 1020/ARCH 1420 course sequence. Students accepted into the Foundation Unit Studio sequence may not defer their acceptance to another academic year. Students that fail to successfully complete the fall semester studio sequence, or students not accepted into the Second Year Studio sequence at the end of the spring semester, will not be readmitted to the Foundation Unit Program. These students may elect to participate in the following Summer Design Studio session and will be required to participate in the entire summer program. Eligibility is dependent upon Summer Design criteria.

Auburn University students who successfully complete 27 hours, pass ARCH 1000, General Physics I, and Calculus I or MATH 1150, and achieve a minimum cumulative GPA of 2.80 are eligible to be accepted into Summer Design. In the event that all available Summer Design seats are not filled based on the stated criteria, the committee may opt to fill the remaining seats based on academic performance of the applicants. Summer Design Studio sequence is divided into two sessions. During the course of the first session each student's work is periodically ranked relative to her/his peers. At the end of the first session the students with the highest rank-in-class are accepted into Session Two, subject to available space. Students not accepted to the Second Year Studio may elect to retake the entire sequence of courses during the following Summer Design Session if they meet the admission criteria or they may elect to change majors.

Admission to the Second Year Studio sequence is predicated on the receipt of a grade of C or better in both ARCH 1020 and ARCH 1420. The Grade Adjustment Policy may not be used to progress to Second Year Studio.

In the event a grade of D or F is received in any required course in the major, a review is required for continuance in the program. Based on the outcome of this review, a student may be required to repeat the course or, in the case of design studios, the entire studio sequence for that respective year-level. Students receiving a second D when repeating a required course will be reviewed for continuance in the program. Similarly, a student receiving a majority of grades of C or poorer may be reviewed for continuance in the program.

Students must maintain professional standards of behavior, as outlined in the Student Policy eHandbook (http://www.auburn.edu/student_info/student_policies), at all times while on university property and while participating in school sponsored trips, events, and activities. Failure to do so may be grounds for dismissal from the program.

To proceed to the beginning sequence of design studio at third, fourth, or fifth year levels, the student must have completed all required prerequisite courses for that respective year-level, as indicated in the model curriculum. Enrollment in 3000-level BSCI courses will be limited to those students with a GPA of 2.50 or above and second-year standing in design studio.

Architecture Transfer Students

Transfer students in Architecture must meet the minimum requirements as set by Auburn University to be admitted to the College of Architecture, Design and Construction. They will be advised to begin with the Summer Design Studio Sequence. Transfer students must also meet the minimum qualifications for admission to Summer Design. Transfer students should contact CADC Student Services no later than January to request a space in the Summer Design Studio.

Foundation Unit Studio placement for transfer candidates is determined each year by the school head, the Architecture program chair, the First-Year Program coordinator and a representative from the Office of Student Services. Up to 20 percent of Foundation Unit Studio positions may be reserved for transfers each year; however, the positions will only be filled if the transferring student's academic performance is competitive with the Foundation Unit Studio top tier ranking students from that academic year freshman admission round. It is possible to have a Foundation Unit Studio with no transfer students. Transfers accepted into the Foundation Unit Studio Sequence may not defer their acceptance to another academic year.

Transfer students from NAAB-accredited architecture programs, in addition to meeting the minimum requirements as set by Auburn University, will be required to present a portfolio of their work to the Academic Review Committee (ARC) for evaluation. The ARC will determine the level of placement in the professional architecture design studio sequence or in the pre-architecture program.

Special Opportunities for Qualified Architecture and Interior Architecture Students

During the third year of design studio students may participate in at least one of a variety of field studies opportunities aimed at enriching students' learning experience and preparing students for professional life. These opportunities include both an international studies program with a variety of options for study abroad as well as the possibility of participation in the Rural Studio - a program based in rural west Alabama where students engage local communities via hands-on service-learning projects to help meet needs of shelter and improved quality-of-life. In addition to the required third year opportunities, students may have additional opportunities during their fifth year of study to participate in the Rural Studio or the Auburn Center for Architecture and Urban Studies - a design center in downtown Birmingham where upper-level students and faculty engage in community-centered, service-learning activities. Participation in each of these programs is limited, and students may be allowed to participate based on academic standing, available resources, and a competitive selection process.

Professional internships with practicing architects are recommended prior to the last year of study.

Architecture/Interior Architecture (ARIA) Academic Standards and Admission Policy

Participation in the Interior Architecture (ARIA) program is highly selective. Students are eligible to apply for the Interior Architecture program in the spring of their second year of the Architecture Program. This policy allows for a summer ARIA thesis class size based on yearly available faculty resources.

Spring semester applications (2nd year students)

The Interior Architecture faculty will make a selection of second year students at the end of Spring semester. Class size is based on available faculty resources and may vary each year. These students will initially participate in the ARIA-designated Third Year Fall Semester Studio. Selection of students is based primarily on the ARIA faculty-comprised Admission Board's assessment of submitted design work. The assessment will be based on the students' statements of intent and on three projects that demonstrate a high quality of design ability. A high quality of design ability is considered to be an indication of an applicant's capability to take on the extra degree requirements of the ARIA degree. Additionally, it is required that accepted students have completed their appropriate studio coursework and maintain a minimum 3.0 GPA for conditional acceptance into the ARIA dual degree program. The students must maintain a minimum of a 3.0 GPA in their studio coursework during the third and fourth year to proceed into the ARIA Summer Thesis semester. If a 3.0 studio GPA is not maintained, a review by the ARIA Admissions Board will be required to determine a student's eligibility to continue in the program.

Major

- Architecture

- Architecture (Foundation Unit) (p. 156)
- Architecture (Summer Design) (p. 157)
- Architecture/Interior Architecture
 - Architecture/Interior Architecture (Foundation Unit) (p. 159)
 - Architecture/Interior Architecture (Summer Design) (p. 161)
- Environmental Design-Pre-Landscape Architecture (p. 165)

Curriculum in Architecture (Foundation Unit)

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	Fine Arts Core (Humanities) ¹	3
MATH 1150 Pre-Calculus Algebra and Trigonometry <i>or</i> 1610 Calculus I	4	ENGL 1120 English Composition II	3
ARCH 1000 Careers in Design and Construction	1	PHYS 1500 General Physics I	4
ARCH 1060 Visual Communication	2	ARCH 1420 Introduction to Digital Media	2
ARCH 1010 Introduction to Architecture Design	5	ARCH 1020 Introduction to Architecture Design II	5
	15		17

Sophomore

Fall	Hours	Spring	Hours
ARCH 2210 Environmental Controls I	3	Core Social Science ⁴	3
ARCH 2010 Studio I	6	BSCI 2400 Structure of Buildings	3
ARCH 2110 History of World Architecture I	3	ARCH 2020 Studio II	6
ARCH 3320 Materials and Methods of Construction I	3	ARCH 4320 Materials and Methods of Construction II	3
		ARCH 3110 History of World Architecture II	3
		To proceed to the beginning sequence of a design studio at third, fourth and fifth year levels, students must have completed all courses prior to that level or have the approval of the Academic Review Committee. [reference CADC Auburn University Bulletin entry]	
	15		18

Junior

Fall	Hours	Spring	Hours
Humanities Core - (Literature) ²	3	ARCH Seminar (See advisor for approved ARCH seminars)	3
BSCI 3400 Structures II	3	PHYS 1510 General Physics II ⁶	4
ARCH 3010 Studio III ¹	6	ARCH 3020 Studio IV ¹	6
ARCH 3700 Seminar in History and Theory	3	ARCH 3410 Dessein Electives	3
ABROAD & Rural Studio -- Optional		ABROAD & Rural Studio -- Optional	
	15		16

Senior

Fall	Hours	Spring	Hours
BSCI 3450 Structures III		3 Free Elective	3
ARCH 4110 History of Urban Architecture		3 Core Humanities ⁵	3
ARCH 2220 Environmental Controls II		2 ARCH 3120 History of Modern Architecture	3
ARCH 4010 Studio V ¹		6 ARCH 4020 Studio VI ¹	6
		ARCH 4500 Professional Practice	3
	14		18

Fifth Year

Fall	Hours	Spring	Hours
Interdisciplinary Prof. Elective or ROTC		3 HIST 1020 World History II	3
HIST 1010 World History I		3 Core Humanities Core (Philosophy) ⁴	3
Core Social Science ⁵		3 ARCH 5020 Thesis Studio ²	7
ARCH 5010 Studio VII ²		6 ARCH 5991 Thesis Research	1
ARCH 5990 Introduction to Thesis Research		2 UNIV 4AA0 University Graduation	0
Urban Studio & Rural Studio -- Optional, by application		Urban Studio & Rural Studio -- Optional, by application	
	17		14

 Total Hours: 159

- ¹ ARCH students may not take ARCH 2600 for Fine Arts credit
- ² For Core, students must complete one approved sequence, either in Literature or History; ARCH/ARIA require a History sequence and one Literature course.
- ³ Satisfies SLO 3 (PHIL 1100, PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090 or comparable Honors course or HONR 1007, HONR 1017
- ⁴ Any Core Social Science course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices
- ⁵ Any Core Humanities course may be selected. See the 2012-13 or an advisor for a list of approved choices
- ⁶ Students must complete a sequence of Core Science courses
- ⁷ See advisor for a list of approved courses.

Curriculum in Architecture (Summer Design)

Freshman

Fall	Hours	Spring	Hours	Summer	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3	ARCH 1010 Introduction to Architecture Design ¹⁰	5
HIST 1010 World History I	3	HIST 1020 World History II	3	ARCH 1020 Introduction to Architecture Design II ¹⁰	5
MATH 1150 Pre-Calculus Algebra and Trigonometry or 1610 Calculus I	4	PHYS 1500 General Physics I ⁶	4	ARCH 1060 Visual Communication ¹⁰	2
Core Fine Arts (Humanities) ¹	3	Free Elective	3	ARCH 1420 Introduction to Digital Media ¹⁰	2

ARCH 1000 Careers in Design and Construction

1

To qualify for summer design, students must meet the following 5 criteria: a minimum of 27 credit hours of university credit, successful completion of ARCH 1000, MATH 1150 Pre-CalAlgebra Trig OR MATH 1610 Calculus 1, and PHYS 1500 General Physics I (Trig. based) and a minimum 2.80 GPA. Students who meet all but the GPA requirement may be considered for acceptance to the Summer Design sequence if space is available in the program

14

13

14

Sophomore

Fall

Hours Spring

Hours

ARCH 2010 Studio I^{7,9}

6 BSCI 2400 Structure of Buildings

3

ARCH 2110 History of World Architecture I

3 ARCH 2020 Studio II^{7,9}

6

ARCH 3320 Materials and Methods of Construction I

3 ARCH 4320 Materials and Methods of Construction II

3

ARCH 2210 Environmental Controls I

3 ARCH 3110 History of World Architecture II

3

undefined

15

15

Junior

Fall

Hours Spring

Hours

BSCI 3400 Structures II

3 ARCH Seminar (see advisor for approved ARCH seminars)

3

Core Literature (Humanities)²

3 ARCH 3020 Studio IV

6

ARCH 3010 Studio III

6 ARCH 3410 Dessein Electives

3

ARCH 3700 Seminar in History and Theory

3 ABROAD & Rural Studio -- Optional

15

12

Senior

Fall

Hours Spring

Hours

BSCI 3450 Structures III

3 Core Humanities⁵

3

ARCH 4010 Studio V

6 ARCH 4020 Studio VI

6

ARCH 2220 Environmental Controls II

2 ARCH 3120 History of Modern Architecture

3

ARCH 4110 History of Urban Architecture

3 ARCH 4500 Professional Practice

3

14

15

Fifth Year

Fall	Hours Spring	Hours
Interdisciplinary Prof. Elective or ROTC	3 Core Social Science ⁴	3
Core Social Science ⁴	3 Core Humanities (Philosophy) ³	3
PHYS 1510 General Physics II ⁶	4 ARCH 5020 Thesis Studio	7
ARCH 5010 Studio VII	6 ARCH 5991 Thesis Research	1
ARCH 5990 Introduction to Thesis Research	2 UNIV 4AA0 University Graduation	0
Urban Studio & Rural Studio -- Optional, by application	Urban Studio & Rural Studio -- Optional, by application	
	18	14

 Total Hours: 159

- ¹ ARCH students may not take ARCH 2600 for Fine Arts credit
- ² For Core, students must complete one approved sequence, either in Literature or History; ARCH/ARIA require a History sequence and one Literature course.
- ³ Satisfies SLO 3 (PHIL 1100, PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090 or comparable Honors course or HONR 1007, HONR 1017
- ⁴ Any Core Social Science course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices
- ⁵ Any Core Humanities course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices
- ⁶ Students must complete a sequence of Core Science courses.
- ⁷ Satisfies SLO 7, Oral Communications skills.
- ⁸ See advisor for approved list of courses.

Curriculum in Architecture/Interior Architecture (Foundation Unit)

Freshman

Fall	Hours Spring	Hours
ENGL 1100 English Composition I	3 Core Fine Arts (Humanities) ¹	3
MATH 1150 Pre-Calculus Algebra and Trigonometry or 1610 Calculus I	4 ENGL 1120 English Composition II	3
ARCH 1000 Careers in Design and Construction	1 PHYS 1500 General Physics I	4
ARCH 1060 Visual Communication	2 ARCH 1420 Introduction to Digital Media	2
ARCH 1010 Introduction to Architecture Design	5 ARCH 1020 Introduction to Architecture Design II	5
	15	17

Sophomore

Fall	Hours Spring	Hours
ARCH 2210 Environmental Controls I	3 Core Social Science ⁴	3
ARCH 2010 Studio I ^{7,8}	6 BSCI 2400 Structure of Buildings	3

ARCH 2110 History of World Architecture I	3	ARCH 2020 Studio II ^{7,8}	6
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ARCH 3320 Materials and Methods of Construction I	3	ARCH 3110 History of World Architecture II	3
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ARCH 4320 Materials and Methods of Construction II	3
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To proceed to the beginning sequence of a design studio at third, fourth and fifth year levels, students must have completed all courses prior to that level or have the approval of the Academic Review Committee. [refer to the CADC Auburn University Bulletin entry]

15	18
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Junior

Fall	Hours	Spring	Hours
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Core Literature (Humanities) ²	3	ARCH Seminar (See advisor for approved ARCH seminars)	3
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BSCI 3400 Structures II	3	PHYS 1510 General Physics II ⁶	4
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ARIA 3020 Studio 4A Interior Architecture	6	ARCH 3020 Studio IV	6
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ARCH 3700 Seminar in History and Theory	3	ARCH 3410 Dessein Electives	3
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ABROAD & Rural Studio -- Optional	ABROAD & Rural Studio -- Optional
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15	16
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Senior

Fall	Hours	Spring	Hours	Summer	Hours
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BSCI 3450 Structures III (concrete)	3	Core Humanities ⁵	3	ARIA 4030 Interior Architecture Thesis	6
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ARCH 4110 History of Urban Architecture	3	ARCH 3120 History of Modern Architecture	3	ARIA 4080 Interior Architecture Thesis Research	2
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ARCH 4010 Studio V	6	ARCH 4500 Professional Practice	3	ARIA 4450 Interior Architecture Professional Practice	2
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ARCH 2220 Environmental Controls II	2	ARIA 4020 Studio 6A Interior Architecture	6	ARIA 4680 History and Theory of Interior Architecture	3
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ARIA 2160 Elements of Interior Architecture II	3	ARIA 2150 Elements of Interior Arch I	3
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17	18	13
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Fifth Year

Fall	Hours	Spring	Hours
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HIST 1010 World History I (Core Social Science) ²	3	Core Social Science	3
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Core Humanities (Philosophy) ³	3	HIST 1020 World History II (Core Social Science) ²	3
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ARCH 5010 Studio VII	6	ARCH 5020 Thesis Studio	7
ARCH 5990 Introduction to Thesis Research	2	ARCH 5991 Thesis Research	1
Urban Studio & Rural Studio -- Optional, by application		UNIV 4AA0 University Graduation	0
		Urban Studio & Rural Studio -- Optional, by application	
	14		14

Total Hours: 172

- ¹ ARCH students may not take ARCH 2600 for Fine Arts credit
- ² For Core students must complete one approved sequence, either in Literature or History; ARCH/ARIA require a History sequence and one Literature course
- ³ Satisfies SLO3 (PHIL 1100, PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090 or comparable Honors course or HONR 1007, HONR 1017
- ⁴ Any Core Social Science course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices
- ⁵ Any Core Humanities course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices.
- ⁶ Students must complete a sequence of Science courses
- ⁷ Satisfies SLO7, Oral Communication

Curriculum in Architecture/Interior Architecture (Summer Design)

Freshman

Fall	Hours	Spring	Hours	Summer	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3	ARCH 1010 Introduction to Architecture Design ⁹	5
HIST 1010 World History I (Core Social Science) ²	3	HIST 1020 World History II (Core Social Science) ²	3	ARCH 1020 Introduction to Architecture Design II ⁹	5
MATH 1150 Pre-Calculus Algebra and Trigonometry or 1610 Calculus I	4	PHYS 1500 General Physics I ⁶	4	ARCH 1060 Visual Communication ⁹	2
Core Fine Arts (Humanities) ¹	3	Core Social Science ⁴	3	ARCH 1420 Introduction to Digital Media ⁹	2
ARCH 1000 Careers in Design and Construction	1			To qualify for summer design, students must meet the following 5 criteria: a minimum of 27 credit hours of university credit, successful completion of ARCH 1000, MATH 1150 Pre-CalAlgebra & Trig OR MATH 1610 Calculus 1, and PHYS 1500 General Physics I (Trig. based) and a minimum 2.80 GPA. Students who meet all but the GPA requirement may be considered for acceptance to the Summer Design sequence if space is available in the program	
	14		13		14

Sophomore

Fall	Hours	Spring	Hours
ARCH 2210 Environmental Controls I		3 BSCI 2400 Structure of Buildings	3
ARCH 2010 Studio I ^{7,8}		6 ARCH 2020 Studio II ^{7,8}	6
ARCH 2110 History of World Architecture I		3 ARCH 4320 Materials and Methods of Construction II	3
ARCH 3320 Materials and Methods of Construction I		3 ARCH 3110 History of World Architecture II	3
		To proceed to the beginning sequence of a design studio at third, fourth and fifth year levels, students must have completed all courses prior to that level or have the approval of the Academic Review Committee. [reference CADC Auburn University Bulletin entry]	
	15		15

Junior

Fall	Hours	Spring	Hours
BSCI 3400 Structures II		3 ARCH Seminar	3
Core Literature (Humanities) ²		3 ARCH 3020 Studio IV	6
ARIA 3020 Studio 4A Interior Architecture		6 ARCH 3410 Dessein Electives	3
ARCH 3700 Seminar in History and Theory		3 ABROAD & Rural Studio -- Optional	
ABROAD & Rural Studio -- Optional			
	15		12

Senior

Fall	Hours	Spring	Hours	Summer	Hours
BSCI 3450 Structures III (concrete)	3	Core Humanities ⁵		3 ARIA 4030 Interior Architecture Thesis	6
ARCH 2220 Environmental Controls II	2	ARCH 3120 History of Modern Architecture		3 ARIA 4080 Interior Architecture Thesis Research	2
ARCH 4010 Studio V	6	ARIA 4020 Studio 6A Interior Architecture		6 ARIA 4450 Interior Architecture Professional Practice	2
ARCH 4110 History of Urban Architecture	3	ARCH 4500 Professional Practice		3 ARIA 4680 History and Theory of Interior Architecture	3
ARIA 2160 Elements of Interior Architecture II	3	ARIA 2150 Elements of Interior Arch I	3		
	17		18		13

Fifth Year

Fall	Hours	Spring	Hours
PHYS 1510 General Physics II ⁶	4	Core Social Science ⁴	3
ARCH 5010 Studio VII	6	ARCH 5020 Thesis Studio	7

ARCH 5990 Introduction to Thesis Research	2	ARCH 5991 Thesis Research	1
Urban Studio & Rural Studio -- Optional, by application		Core Humanities (Philosophy) ³	3
		UNIV 4AA0 University Graduation	0
		Urban Studio & Rural Studio -- Optional, by application	
	12		14

Total Hours: 172

- ¹ ARCH students may not take ARCH 2600 for Fine Arts credit
- ² For Core students must complete one approved sequence, either in Literature or History; ARCH/ARIA require a History sequence and one Literature course.
- ³ Satisfies SLO 3 (PHIL 1100, PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090 or comparable Honors course or HONR 1007, HONR 1017)
- ⁴ Any Core Social Science course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices
- ⁵ Any Core Humanities course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices
- ⁶ Students must complete a sequence of Science courses
- ⁷ Satisfies SLO7, Oral Communication

Majors

Curriculum in Environmental Design

Bachelor of Science in Environmental Design

The bachelor of science in environmental design is a flexible multi-disciplinary degree. The degree content includes the five core environmental design courses, directed electives and free electives. Students are encouraged to utilize the free electives to earn one or two minors. Two summers of coursework are required for the environmental design workshop course series. The degree is a good option for students who are interested in pursuing graduate studies in design, planning and construction related programs.

Students who pursue the environmental design degree will learn core knowledge of design and construction disciplines and business practices related to human-designed environments, including awareness of national and global perspectives. Exposure to national/global environmental design issues, focus on interdisciplinary concepts, hybrid practices, and sustainability are key aspects of the curriculum. A two part workshop course series allows students to focus on developing a general technical skill set for environmental design foundations. Digital media introduction, structure and fabrication techniques, design communication development are included. A capstone workshop requires students to initiate and complete a community engagement environmental design project using principles of collaboration, leadership and effectiveness training, hands-on experience, civic engagement and design communication skills.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
HIST 1010/1017 World History I ¹	3	HIST 1020/1027 World History II	3
Core Math	3	Core Science I ⁵	4
Directed Elective 1#	3	Free Elective	3

Free Elective	3				
	15		13		
Sophomore					
Fall	Hours	Spring	Hours	Summer	Hours
Core Literature (Humanities) ¹	3	Core Humanities (Philosophy) ²	3	ENVD 2100 Environmental Design Workshop I	6
Core Science II ³	4	Directed Elective 2	3	Directed Elective 3 ¹	3
Free Elective	6	Core Science II ³	3		
ARCH 2600 The Art of Architecture, Place, and Culture	3	Free Elective	3		
		ENVD 2000 Environmental Design Concepts and Practices I	3		
	16		15		9
Junior					
Fall	Hours	Spring	Hours	Summer	Hours
Core Social Science ³	3	ENVD 3100 Civic Engagement and Research Methods	3	ENVD 4100 Environmental Design Workshop II - Capstone	6
ENVD 3000 Environmental Design Concepts and Practices II	3	Directed Elective 5	3	Free Elective ¹	3
ENVD 4010 Elements of Design Thinking and Communication	3	Free Elective	6		
Directed Elective 4	3	ENVD 4970 Special Topics in Environmental Design	3		
Free Elective	3				
	15		15		9
Senior					
Fall	Hours				
Core Humanities ⁴	3				
Free Elective	10				
UNIV 4AA0 University Graduation	0				
	13				

Total Hours: 120

¹ For Core students must complete one approved sequence, either in Literature or History; ARCH/ARIA require a History sequence and one Literature course.

² Satisfies SLO 3 (PHIL 1100, PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090 or comparable Honors course or HONR 1007, HONR 1017)

³ Any Core Social Science course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices

⁴ Any Core Humanities course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices

⁵ Students must complete a sequence of Science courses

⁶ Satisfies SLO 7, Oral Communication

Curriculum in Environmental Design - Pre-Landscape Architecture Track

The bachelor of science in environmental design pre-landscape architecture track is preparation for the Master of Landscape Architecture graduate program. Pre-landscape architecture students begin taking the first three semesters of the Master of Landscape Architecture program in the summer after their third year of undergraduate study. Successful performance in the coursework leads to advanced placement in the Master of Landscape Architecture program. A successful student may complete the Bachelor of Science in Environmental Design and the first professional Master of Landscape Architecture in 5 years (including 3 summers).

See Advisor for current curriculum model.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core Science 1 ⁵	4	Core Science 2 ⁵	4
Core Math	3	Core Fine Arts (Humanities)	3
ARCH 1000 Careers in Design and Construction	1	Directed Elective 1	3
Core Social Science ³	3		
	14		13

Sophomore

Fall	Hours	Spring	Hours	Summer	Hours
Core Literature (Humanities) ¹	3	Core Humanities ⁴	3	ENVD 2100 Environmental Design Workshop I	6
HIST 1010/1017 World History I	3	HIST 1020/1027 World History II	3		
Directed Elective 2	3	ENVD 2000 Environmental Design Concepts and Practices I	3		
GEOG 1010 Global Geography	3	ENVD 2200 Readings in Landscape Architecture	3		
	12		12		6

Junior

Fall	Hours	Spring	Hours	Summer	Hours
PHIL 1070 Art, Value, and Society	3	ENVD 3100 Civic Engagement and Research Methods	3	LAND 5130/6130 Studio I: Foundation Studio ^{1,7}	5
ENVD 3000 Environmental Design Concepts and Practices II	3	CPLN 5000/6000 History and Theory of Urban Form	3	LAND 5131/6131 Studio I: Field Studies ^{1,7}	1
LAND 5170/6170 Graphic Studies II	3	LAND 5240 Traditions of Landscape Making	3	LAND 5140/6140 History I: Landscape Modernism ^{1,7}	3
ENVD 4010 Elements of Design Thinking and Communication	3	ENVD 4970 Special Topics in Environmental Design	3	LAND 5150/6150 Construction I ^{1,7}	2
				LAND 5160/6160 Graphic Studies ^{1,7}	2

If a student successfully completes the Pre-Landscape Architecture summer program, then the student progresses into the remainder of the Pre-Land curriculum. Otherwise the student will return to the basic ENVD degree plan

	12	12	13
Senior			
Fall	Hours	Spring	Hours
LAND 5230 Studio II	5	LAND 5330 Studio III	5
LAND 5231 Field Studies II	1	LAND 5331 Field Studies III	1
LAND 5250 Construction II	2	LAND 5340 Urban Studies I: American Urban Landscapes	3
LAND 5270/6270 Plant Spatiality	2	LAND 5250 Construction II	2
GEOG 5830/6830 Geographic Information Systems	4	LAND 5370 Plant Ephemerality	2
UNIV 4AA0 University Graduation	0	LAND 5360 Dynamic Systems I: Urban Ecologies	3
	14	16	

Total Hours: 124

- ¹ For Core students must complete one approved sequence, either in Literature or History; ARCH/ARIA require a History sequence and one Literature course.
- ² Satisfies SLO 3 (PHIL 1100, PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090 or comparable Honors course or HONR 1007, HONR 1017)
- ³ Any Core Social Science course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices.
- ⁴ Any Core Humanities Science course may be selected. See the 2012-13 *Bulletin* or an advisor for a list of approved choices
- ⁵ Students must complete a sequence of Science courses
- ⁶ Satisfies SLO 7, Oral Communication

College of Business

BILL C. HARDGRAVE, *Dean*

NORMAN H. GODWIN, *Associate Dean for Academic Affairs*

DANIEL M. GROPPER, *Associate Dean for Graduate and International Programs*

JOE B. HANNA, *Associate Dean for Research and Outreach*

THE COLLEGE OF BUSINESS prepares students to become effective and socially responsible managers of business, industrial organizations, and government agencies and responsible citizens and leaders of society. To achieve this goal, the college offers undergraduate programs leading to the bachelor of science in business administration. In addition, it offers graduate work for the degrees of master of business administration (MBA), master of science in business administration (MSBA) with concentrations in finance and human resources management (currently discontinued), master of science in management information systems (MSIS), master of accountancy (MAc), and the doctor of philosophy (PhD) in management. The College of Business and the School of Accountancy are accredited at the undergraduate and graduate levels by the Association to Advance Collegiate Schools of Business (AACSB International). Detailed information on graduate programs may be found in the Graduate School section in this *Bulletin*.

Curriculum

The undergraduate curriculum includes a two-year Pre-Business Program required of all students and a two-year Professional Program. These programs provide a balanced course of study for all students, with approximately one-half of the hours in business

courses and one-half in courses offered outside the college. The courses required have been selected so that all students will have access to the “common body of knowledge” as designated by (AACSB International).

The Pre-Business Program, followed by all business students in their freshman and sophomore years, provides a sound foundation of work in the arts and sciences, including courses in mathematics, humanities, social sciences and natural sciences. This lower division program also includes some of the introductory business courses.

The Professional Program is offered through the School of Accountancy and the departments of Aviation and Supply Chain Management; Finance; Management; and Marketing. The professional program allows each student to concentrate in an area of interest during the junior and senior years. The 12 options available include: accountancy (ACCT), finance (FINC), international business (IBUS), business administration (BSAD), human resources management (HRMN), management information systems (ISMN), entrepreneurship and family business (ENFB), management (MNGT), marketing (MKTG), supply chain management (SCMN), aviation management (AVMG) and professional flight management (AVMF). Through these programs, the college seeks to develop in its students the analytical, decision-making and communication skills required of managers who lead modern organizations.

Admission to the College

Students entering the pre-business program directly from high school or another college or university, in addition to meeting Auburn University's admission requirements, should have competence in the mathematics taught in second year algebra.

Incoming freshmen and external transfer students are admitted directly to the College of Business. Current non-business students who are interested in transferring into the College of Business should refer to the “Transfer Guide” on the College's advising web page.

Graduation Requirements

To graduate, business students must meet the hours and subject matter requirements of their curricula, must have an overall GPA of at least 2.0 on all courses attempted at Auburn University, must have an overall GPA of at least 2.0 in all courses required for the major, and must meet all other university requirements. At least 50 percent of the business credit hours required for the business degree must be taken at Auburn University.

Student Advising System

The Office of Student Affairs of the College of Business is responsible for orienting all new students, freshmen and transferees to the college. Although not required, students are strongly encouraged to meet with their academic advisor each semester prior to registration to have their academic plan approved and obtain information about curricula, classes and other requirements. Students can visit the college's advising Web page at www.business.auburn.edu/ for details on creating an academic plan.

The Office of Professional and Career Development is available to all students for career guidance. Students are encouraged to seek advice on professional questions from department heads and faculty through personal arrangements or appointments.

Cooperative Education Program

Business students are eligible to participate in AU's Cooperative Education Program. This program allows students to combine academic training with actual business experience.

Minors

For departmental minors, business courses must be at the 3000-level or above, with the exception of Aviation Management minor, and from an approved list.

- Accountancy (p. 168)
- Aviation Management (p. 171)
- Business (https://bulletin.auburn.edu/undergraduate/collegeofbusiness/business_minor)
- Business Analytics (p. 171)
- Business-Engineering-Technology (p. 171)
- Finance (p. 181)
- Information Assurance (p. 177)
- International Business (p. 181)
- Information Systems Management (p. 177)

- Marketing (p. 188)
- Professional Flight Management (p. 178)
- Supply Chain Management (p. 178)

Program

- Accountancy (p. 480)
- Aviation and Supply Chain Management - MSIS, PhD (p. 486)
- Business Administration - MBA, MS, PhD (p. 489)
- Finance - MSBA (p. 510)
- Management - MSBA, PhD (p. 523)

School of Accountancy

The mission of the School of Accountancy at Auburn University is to serve society and the business and accounting communities by producing graduates who possess the ethical values, technical competencies, lifelong learning skills, and cultural experiences necessary to meet professional requirements and make meaningful contributions to their respective institutions, by advancing accounting knowledge through research and pedagogical innovation, and by disseminating this knowledge through interaction with the academic community and our constituents.

Our undergraduate program will prepare students to enter public accounting, business, government, or industry. Our Master of Accountancy program will prepare students to begin a career as a Certified Public Accountant.

Major

- Accountancy (p. 168)

Minor

- Accountancy (p. 168)

Accountancy Minor

15 semester hours in minor (3000-level or above)

ACCT 3110	Intermediate Accounting I	3
ACCT 3120	Intermediate Accounting II	3
Elective Courses - See advisor for approved course listing.		9
Total Hours		15

Curriculum in Accountancy

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
World History I or II	3	World History I or II or Social Science Core Elective	3
MATH 1680 Calculus with Business Applications I	4	BUAL 2600 Business Analytics I	3
Core Science I	4	Core Science II	4

BUSI 1010 Contemporary Issues in Business Administration I	1 COMP 1000 Personal Computer Applications <i>or</i> 1003 Personal Computer Applications	2
	BUSI 2100 Oral Communication for Business	1
	15	16

Sophomore

Fall	Hours	Spring	Hours
Social Science Core Elective	3	ECON 2030 Principles of Macroeconomics	3
ECON 2020 Principles of Microeconomics	3	Core Literature II or Humanities Core Elective	3
Core Literature	3	PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3
Core Fine Art	3	ACCT 2110 Principles of Financial Accounting	3
ACCT 2700 Business Law	3	Elective	3
BUSI 2010 Contemporary Issues in Business Administration	1		
	16		15

Junior

Fall	Hours	Spring	Hours
FINC 3610 Principles of Business Finance	3	MNGT 3100 Principles of Management	3
BUAL 3600 Business Analytics II	3	MKTG 3310 Principles of Marketing	3
ACCT 3110 Intermediate Accounting I	3	ACCT 3120 Intermediate Accounting II	3
ACCT 3210 Cost Accounting	3	ACCT 3510 Accounting Information Systems	3
ACCT 3310 Business Processes and Internal Controls	3	ACCT 4410 Income Tax I	3
Elective	1		
	16		15

Senior

Fall	Hours	Spring	Hours
Accounting Elective	6	MNGT 4800 Strategic Management	3
Business Elective ¹	3	ACCT 4310 Auditing and Assurance Services	3
Elective	3	Accounting Elective or Business Elective	3
Elective	3	Elective	3
		Elective	3
		UNIV 4AA0 University Graduation	0
	15		15

Total Hours: 123

¹ Must be a non-accounting business elective.

Students not passing the University IT examination must take COMP 1000 Personal Computer Applications.

Students have 18 hours of electives; these may be either non-business or business courses outside of Accounting.

Accounting and business electives must be taken from an approved list.

Department of Aviation and Supply Chain Management

The Department of Aviation and Supply Chain Management prepares students for careers involving the planning and execution of processes related to the movement of passengers, product, and information. The professional programs within the Department are designed to provide students with the technical skills and knowledge needed to be effective decision makers for their organizations. The professional programs available are Information Systems Management (ISMN), Business Analytics (BUAL), Supply Chain Management (SCMN), Aviation Management (AVMG), and Professional Flight Management (AVMF). Information regarding careers, internships, scholarships, and student organizations is available through the program coordinators. College of Business pre-requisites are strictly enforced. Junior standing and compliance with College of Business academic standards are required for all 3000 and above level courses.

Information Systems Management

The Information Systems Management program provides education and training so that students can help lead organizational change projects in transforming and improving business processes and in designing and creating new, innovative digital products and services. The program is designed to enable students to meet the challenges that are poised by Information Technology Management in both public sector and for-profit organizations. Because information systems are critical to all aspects of every organization, Information System Management majors are in great demand in the marketplace.

Business Analytics

The Business Analytics Program prepares students for careers that use data to support strategic decision making. Students learn skills in a natural progression including managing data, uncovering patterns in data, developing predictive models, and using these models to make better decisions. Business Analytics skills are in demand across a wide range of industries including healthcare, marketing, finance, consulting, transportation, and information technology. Students are encouraged to develop expertise in a functional business discipline such as marketing or finance using elective coursework.

Supply Chain Management

The Supply Chain Management program combines logistics and operations management knowledge to provide a comprehensive education for students interested in careers with manufacturers, retailers, consultancies, and logistics services providers. The primary goal of the program is to provide a practical understanding of procurement, operations, logistics, and transportation so that graduates will excel in entry-level management positions, graduate school, and future opportunities.

Aviation Management

The Aviation Management program is accredited by Aviation Accreditation Board International. The program provides a technical management background and specialization in aviation leading to careers with airlines, aircraft manufacturers, airports, and other segments of the aviation industry. Individuals interested in registering in the Aviation Management concentration are advised to contact the program director for Aviation Management in the College of Business for proper counseling and classification.

Professional Flight Management

The Professional Flight Management program is accredited by Aviation Accreditation Board International. The program provides the technical management background and specialization as does the Aviation Management concentration. Additionally, students pursuing the Professional Flight Management concentration are required to earn the pilot ratings that are required to meet the qualifications to be hired as a pilot with the airlines or corporate aviation. The pilot courses within the Professional Flight Management curriculum require students to obtain and maintain a Federal Aviation Administration medical certificate. The pilot courses also incur additional fees beyond Auburn University tuition. See the program coordinator for further details.

Majors

- Aviation Management (p. 171)
- Business Analytics (p. 173)
- Information Systems Management (p. 174)
- Professional Flight Management (p. 175)
- Supply Chain Management (p. 176)

Minors

- Aviation Management (p. 171)
- Business Analytics (p. 171)
- Business-Engineering-Technology (p. 171)
- Information Assurance (p. 177)
- Information Systems Management (p. 177)
- Professional Flight Management (p. 178)
- Supply Chain Management (p. 178)

Aviation Management Minor

15 semester hours in minor (12 hours at 3000-level or above)

AVMG 1010	Introduction to Aviation	2
AVMG 5090	Aviation Law and Policy	3
Elective Courses - See advisor for approved course listing.		10
Total Hours		15

Business Analytics Minor

15 semester hours in minor

BUAL 5650	Big Data I	3
BUAL 5660	Big Data II	3
BUAL 5600	Predictive Modeling I	3
BUAL 5610	Predictive Modeling II	3
BUAL 5860	Communicating Quantitative Results in Business	3
Total Hours		15

Business-Engineering-Technology Minor

Students who minor in Business-Engineering-Technology learn, practice, and integrate entrepreneurship, engineering, and business management skills demanded by the technology-driven global economy, solve real-world case study and design problems, and work in cross-functional teams. The minor is a joint offering by the Colleges of Business and Engineering. Admission to the minor is competitive. Engineering and business majors apply for admission to the Business-Engineering-Technology Program as second semester sophomores. To remain in the program the cumulative GPA must be equal to or greater than 3.0.

ENGR 3510	Introduction to Business and Engineering	3
ENGR 3520	Integrating Business and Engineering Theory with Practice	3
BUSI 3550	Cross-Functional Teamwork	1
BUSI 3560	Leadership	1
BUSI 4540	Entrepreneurship and Strategic Management of Technology and Innovation	4
ENGR 4970	Product/Process Design and Development I	1
ENGR 4980	Product/Process Design and Development II	3
Total Hours		16

Curriculum in Aviation Management

Freshman

Fall		Hours	Spring	Hours
ENGL 1100 English Composition I		3	ENGL 1120 English Composition II	3
World History I or II		3	PHYS 1000 Foundations of Physics ¹	4
MATH 1680 Calculus with Business Applications I		4	BUAL 2600 Business Analytics I	3
SCMH 1010 Concepts of Science ¹		4	AVMG 1010 Introduction to Aviation	2
BUSI 1010 Contemporary Issues in Business Administration I		1	COMP 1000 Personal Computer Applications or 1003 Personal Computer Applications	2
			BUSI 2100 Oral Communication for Business	1
		15		15
Sophomore				
Fall		Hours	Spring	Hours
Core Literature I		3	Core Literature II or Humanities Core Elective	3
World History I or II or Social Science Core Elective		3	PHIL 1020 Introduction to Ethics or 1040 Business Ethics	3
Social Science Core Elective		3	ECON 2030 Principles of Macroeconomics	3
BUSI 2010 Contemporary Issues in Business Administration		1	ACCT 2210 Principles of Managerial Accounting	3
ECON 2020 Principles of Microeconomics		3	ACCT 2700 Business Law	3
ACCT 2110 Principles of Financial Accounting		3		
		16		15
Junior				
Fall		Hours	Spring	Hours
Core Fine Arts		3	MKTG 3310 Principles of Marketing	3
MNGT 3100 Principles of Management		3	FINC 3610 Principles of Business Finance	3
SCMN 3150 Ops: Mngt of Business Proces		2	SCMN 3720 Trans: Mngt of Product Flows	3
AVMG 3050 Severe and Hazardous Weather Disruptions		3	AVMG 3140 Performance Evaluation and Measurement	3
BUAL 3600 Business Analytics II		3	Free Elective	3
Free Elective		2		
		16		15
Senior				
Fall		Hours	Spring	Hours
AVMG 3200 Applied Analysis in Transportation		3	MNGT 4800 Strategic Management	3
AVMG 4060 Transportation Safety Management		3	AVMG 5090 Aviation Law and Policy	3
AVMG 4190 Air Space Management		3	HRMN 3420 Human Resource Management	3
ENGL 3080 Business Writing		3	AVMG 4810 Professional Development in Aviation	1
Directed Elective		3	AVMG 5180 Global Air Transportation Management	3
			Elective	3
			UNIV 4AA0 University Graduation	0
		15		16

Total Hours: 123

¹ PHYS 1500/PHYS 1510 or PHYS 1600/PHYS 1610 may substitute the SCMH 1010/PHYS 1000 requirement.

Curriculum in Business Analytics

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
World History I or II	3	Core Fine Arts	3
MATH 1680 Calculus with Business Applications I	4	COMP 1000 or 1003 Personal Computer Applications	2
Core Science I	4	Core Science II	4
BUSI 1010 Contemporary Issues in Business Administration I	1	Elective	3
		BUSI 2100 Oral Communication for Business	1
	15		16

Sophomore

Fall	Hours	Spring	Hours
ECON 2020 Principles of Microeconomics	3	ECON 2030 Principles of Macroeconomics	3
ACCT 2110 Principles of Financial Accounting	3	ACCT 2210 Principles of Managerial Accounting	3
Core Literature	3	Core Literature II or Humanities Core Elective	3
ACCT 2700 Business Law	3	BUAL 2600 Business Analytics I	3
World History I or II or Social Science Core Elective	3	Social Science Core Elective	3
BUSI 2010 Contemporary Issues in Business Administration	1		
	16		15

Junior

Fall	Hours	Spring	Hours
Elective	2	FINC 3610 Principles of Business Finance	3
MNGT 3100 Principles of Management	3	MKTG 3310 Principles of Marketing	3
BUAL 3600 Business Analytics II	3	BUAL 5660 Big Data II	3
BUAL 5650 Big Data I	3	BUAL 5600 Predictive Modeling I	3
ISMN 3140 Introduction to Management Information Systems	2	Elective	3
PHIL 1020 Introduction to Ethics	3		
	16		15

Senior

Fall	Hours	Spring	Hours
BUAL 5610 Predictive Modeling II	3	MNGT 4800 Strategic Management	3
Business Analytics Elective	3	BUAL 5860 Communicating Quantitative Results in Business	3
Business Analytics Elective	3	Business Analytics Elective	3
Business Analytics Elective	3	Business Analytics Elective	3

Elective	3 Elective	3
	15	15

Total Hours: 123

Curriculum in Information Systems Management

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
World History I or II		3 World History I or II or Social Science Core Elective	3
MATH 1680 Calculus with Business Applications I		4 Core Science II	4
Core Science I		4 BUAL 2600 Business Analytics I	3
BUSI 1010 Contemporary Issues in Business Administration I		1 COMP 1000 Personal Computer Applications <i>or</i> 1003 Personal Computer Applications	2
		BUSI 2100 Oral Communication for Business	1
	15		16

Sophomore

Fall	Hours	Spring	Hours
ECON 2020 Principles of Microeconomics		3 PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3
Core Literature		3 ECON 2030 Principles of Macroeconomics	3
Core Fine Arts		3 Core Literature II or Humanities Core Elective	3
Social Science Core Elective		3 ACCT 2210 Principles of Managerial Accounting	3
ACCT 2110 Principles of Financial Accounting		3 ACCT 2700 Business Law	3
BUSI 2010 Contemporary Issues in Business Administration		1	
	16		15

Junior

Fall	Hours	Spring	Hours
ISMN 5370 Project Management		3 ISMN 3840 Analysis of Business Systems	3
ISMN 3070 Business System Logic and Modeling		3 ISMN 3830 Database Management Systems	3
ISMN 3140 Introduction to Management Information Systems		2 MNGT 3100 Principles of Management	3
BUAL 3600 Business Analytics II		3 FINC 3610 Principles of Business Finance	3
SCMN 3150 Ops: Mngt of Business Proces		2 ISMN Elective	3
MKTG 3310 Principles of Marketing		3	
	16		15

Senior

Fall	Hours	Spring	Hours
ISMN 4090 Design of Business Systems		3 MNGT 4800 Strategic Management	3
ISMN Elective		6 ISMN Elective	3
Business Elective		3 Business Elective	6

Elective	3 Elective	3
	UNIV 4AA0 University Graduation	0
	15	15

Total Hours: 123

Students not passing the University IT examination must take COMP 1000.

ISMN Electives: Must be selected from an approved list.

Business electives are College of Business courses at the 3000 to 5000 level (see approved list).

Curriculum in Professional Flight Management

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1680 Calculus with Business Applications I	4	SCMH 1010 Concepts of Science ¹	4
BUSI 1010 Contemporary Issues in Business Administration I	1	BUAL 2600 Business Analytics I	3
AVMG 1010 Introduction to Aviation	2	AVMF 2251 Instrument Flight Training II	1
AVMF 2230 Prin of Instrument Flight	3	World History I or II or Social Science Core Elective	3
AVMF 2241 Instrument Flight Training I	1	BUSI 2100 Oral Communication for Business	1
COMP 1000 Personal Computer Applications	2		
	16		15

Sophomore

Fall	Hours	Spring	Hours
Core Social Science	3	Core Literature	3
ECON 2020 Principles of Microeconomics	3	ECON 2030 Principles of Macroeconomics	3
ACCT 2110 Principles of Financial Accounting	3	ACCT 2210 Principles of Managerial Accounting	3
AVMF 2250 Comm Flight Problems	3	ACCT 2700 Business Law	3
AVMF 2261 Comm Flight Training II	1	PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3
BUSI 2010 Contemporary Issues in Business Administration	1	AVMF 2271 Comm Flight Train III	1
	14		16

Junior

Fall	Hours	Spring	Hours
MNGT 3100 Principles of Management	3	World History I or II	3
PHYS 1000 Foundations of Physics ¹	4	MKTG 3310 Principles of Marketing	3
BUAL 3600 Business Analytics II	3	FINC 3610 Principles of Business Finance	3
AVMG 3050 Severe and Hazardous Weather Disruptions	3	AVMG 3140 Performance Evaluation and Measurement	3
SCMN 3150 Ops: Mngt of Business Proces	2	SCMN 3720 Trans: Mngt of Product Flows	3

AVMF 4271 Multi Engine Training	1	
	16	15
Senior		
Fall	Hours Spring	Hours
Core Fine Arts	3 Core Literature II or Humanities Core Elective	3
ENGL 3080 Business Writing	3 MNGT 4800 Strategic Management	3
AVMG 4060 Transportation Safety Management	3 AVMF 4400 Applied Aerodynamics and Propulsion Systems	3
AVMG 4190 Air Space Management	3 AVMG 5090 Aviation Law and Policy	3
AVMG 3200 Applied Analysis in Transportation	3 AVMG 4810 Professional Development in Aviation	1
	AVMG 5180 Global Air Transportation Management	3
	UNIV 4AA0 University Graduation	0
	15	16
Total Hours: 123		

¹ PHYS 1500/PHYS 1510 or PHYS 1600/PHYS 1610 can substitute the SCMH 1010/PHYS 1000 requirement.

Completion of Information Technology Literacy Requirement.

Curriculum in Supply Chain Management

Freshman

Fall	Hours Spring	Hours
ENGL 1100 English Composition I	3 ENGL 1120 English Composition II	3
World History I or II	3 Core Science II	4
MATH 1680 Calculus with Business Applications I	4 World History I or II or Social Science Core Elective	3
BUSI 1010 Contemporary Issues in Business Administration I	1 COMP 1000 Personal Computer Applications <i>or</i> 1003 Personal Computer Applications	2
Core Science I	4 BUAL 2600 Business Analytics I	3
	BUSI 2100 Oral Communication for Business	1
	15	16

Sophomore

Fall	Hours Spring	Hours
ECON 2020 Principles of Microeconomics	3 PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3
Core Literature	3 ECON 2030 Principles of Macroeconomics	3
Social Science Core Elective	3 Core Literature II or Humanities Core Elective	3
ACCT 2110 Principles of Financial Accounting	3 ACCT 2210 Principles of Managerial Accounting	3

BUSI 2010 Contemporary Issues in Business Administration	1 ACCT 2700 Business Law	3
Core Fine Arts	3	
	16	15

Junior

Fall	Hours	Spring	Hours	Summer	Hours
BUAL 3600 Business Analytics II	3	MNGT 3100 Principles of Management	3	SCMN 3920 Internship in Supply Chain Management	3
SCMN 3810 Professional Development in Supply Chain Management	1	FINC 3610 Principles of Business Finance	3		
SCMN 3150 Ops: Mngt of Business Proces	2	SCMN 3720 Trans: Mngt of Product Flows	3		
SCMN 3710 Logs: Mngt of Fulfillment Proc	3	SCMN 3730 Purchasing: Supply Management and Searching	3		
MKTG 3310 Principles of Marketing	3	Elective	3		
Elective	3				
	15		15		3

Senior

Fall	Hours	Spring	Hours
SCMN 4370, 4780, 5710, or 5720	3	SCMN 4800 Supply Chain Stgy:Global Persp (SCMN Elective)	3
SCMN 4700 Supply Chain Performance Management	3	Elective	4
SCMN Elective	3	MNGT 4800 Strategic Management	3
Elective	6	SCMN Elective	3
		UNIV 4AA0 University Graduation	0
	15		13

 Total Hours: 123

Information Assurance Minor

15 semester hours in minor

ISMN 5670	Security and Information Assurance	3
Elective Courses - See advisor for approved course listing. For Business majors only.		12
Total Hours		15

Information Systems Management Minor

15 semester hours in minor (3000-level or above)

ISMN 3040	Business Telecom Management	3
ISMN 3070	Business System Logic and Modeling	3
ISMN 3830	Database Management Systems	3

ISMN 4090	Design of Business Systems	3
Elective Courses - See advisor for approved course listing.		3
Total Hours		15

Professional Flight Management Minor

20 semester hours in minor

AVMF 2230	Prin of Instrument Flight	3
AVMF 2241	Instrument Flight Training I	1
AVMF 2250	Comm Flight Problems	3
AVMF 2251	Instrument Flight Training II	1
AVMF 2261	Comm Flight Training II	1
AVMF 2271	Comm Flight Train III	1
AVMF 4271	Multi Engine Training	1
AVMF 4400	Applied Aerodynamics and Propulsion Systems	3
AVMG 3050	Severe and Hazardous Weather Disruptions	3
SCMN 3720	Trans: Mngt of Product Flows	3
Total Hours		20

Supply Chain Management Minor

15 semester hours in minor (3000-level or above)

SCMN 3150	Ops: Mngt of Business Proces	2
SCMN 3710	Logs: Mngt of Fulfillment Proc	3
SCMN 3720	Trans: Mngt of Product Flows	3
SCMN 3730	Purchasing: Supply Management and Searching	3
Elective Courses - See advisor for approved course listing.		3
SCMN 3810	Professional Development in Supply Chain Management	1
Total Hours		15

Department of Finance (FINC)

Finance

The objective of the finance curriculum is to develop the specialized finance knowledge, techniques, and skills necessary for successful placement in finance related positions. The program encompasses the major areas of finance including corporate finance, financial institutions and markets, and investments. In addition, the program offers elective work in the subareas of real estate and risk management and insurance. The program will allow students the opportunity to develop not only the specialized knowledge of finance, but also the professional presentation and use of such knowledge through oral and written communication. Students enrolled in the finance program also complete the College of Business core curriculum designed to provide the broader understanding of the entire business organization including accounting, economics, management and marketing. College of Business pre-requisites are strictly enforced. Junior standing and compliance with College of Business academic standards are required for all 3000 and above level courses.

International Business

The objective of the program is to provide students with not only the business preparation necessary for success in the global environment, but also the foreign language skills to effectively communicate in that environment. The IBUS curriculum is designed to provide maximum flexibility and broad-based preparation for future career opportunities.

Graduates are prepared for entry-level positions in many areas of business activity depending upon their particular area of concentration within business. Within the language component, students must select from French, German, Spanish, or Chinese.

Majors

- Finance (p. 179)
- International Business (p. 180)

Minors

- Finance (p. 181)
- International Business (p. 181)

Curriculum in Finance

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
World History I or II	3	World History I or II or Social Science Core Elective	3
MATH 1680 Calculus with Business Applications I	4	BUAL 2600 Business Analytics I	3
Core Science I	4	Core Science II	4
BUSI 1010 Contemporary Issues in Business Administration I	1	COMP 1000 Personal Computer Applications <i>or</i> 1003 Personal Computer Applications	2
		BUSI 2100 Oral Communication for Business	1
	15		16

Sophomore

Fall	Hours	Spring	Hours
Social Science Core Elective	3	ECON 2030 Principles of Macroeconomics	3
ECON 2020 Principles of Microeconomics	3	Core Literature II or Humanities Core Elective	3
Core Literature	3	PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3
Core Fine Arts	3	ACCT 2210 Principles of Managerial Accounting	3
ACCT 2110 Principles of Financial Accounting	3	ACCT 2700 Business Law	3
BUSI 2010 Contemporary Issues in Business Administration	1		
	16		15

Junior

Fall	Hours	Spring	Hours
BUAL 3600 Business Analytics II	3	FINC 3630 Advanced Business Finance	3
MNGT 3100 Principles of Management	3	FINC 3700 Financial Markets Institutions	3
MKTG 3310 Principles of Marketing	3	Finance Elective	3
FINC 3610 Principles of Business Finance	3	Elective	6
ACCT 3110 Intermediate Accounting I	3		
	15		15

Senior

Fall	Hours	Spring	Hours
FINC 3640 Investments		3 MNGT 4800 Strategic Management	3
Finance Elective		3 Finance Elective	6
Elective		10 Elective	6
		UNIV 4AA0 University Graduation	0
		16	15

Total Hours: 123

Students not passing the University IT examination must take COMP 1000.

Finance electives must be selected from an approved list.

Curriculum in International Business

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
World History I or II		3 World History I or II or Social Science Core Elective	3
MATH 1680 Calculus with Business Applications I		4 BUAL 2600 Business Analytics I	3
BUSI 1010 Contemporary Issues in Business Administration I		1 Elementary Foreign Language II	4
Elementary Foreign Language I		4 BUSI 2100 Oral Communication for Business	1
		COMP 1000 Personal Computer Applications	2
		15	16

Sophomore

Fall	Hours	Spring	Hours
BUSI 2010 Contemporary Issues in Business Administration		1 ECON 2030 Principles of Macroeconomics	3
ECON 2020 Principles of Microeconomics		3 Core Literature II or Humanities Core Elective	3
Core Literature I		3 ACCT 2210 Principles of Managerial Accounting	3
ACCT 2110 Principles of Financial Accounting		3 ACCT 2700 Business Law	3
Social Science Core Elective		3 Intermediate Foreign Language II ¹	4
Intermediate Foreign Language I ¹		4	
		17	16

Junior

Fall	Hours	Spring	Hours
Core Science I		4 Core Science II	4
MNGT 3100 Principles of Management		3 BUAL 3600 Business Analytics II	3
MKTG 3310 Principles of Marketing		3 FINC 5510 Multinational Financial Management	3
FINC 3610 Principles of Business Finance		3 Business Concentration ²	3
Foreign Language Comp. & Conv. ¹		3 Foreign Language Comp. & Conv. ¹	3
		16	16

Senior

Fall	Hours Spring	Hours
PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3 Core Fine Arts	3
Business Concentration ²	3 MNGT 4800 Strategic Management	3
Foreign Business Language ¹	3 Business Concentration ²	6
ECON 4300 International Economics	3 Elective	2
Elective	2 UNIV 4AA0 University Graduation	0
	14	14

Total Hours: 124

¹ Language sequence to be taken exclusively in French, German, Spanish, or Chinese.

² A twelve hour Business Concentration must be selected from one of the following areas: Economics, Entrepreneurship & Family Business, Finance, Marketing or Supply Chain Management. See CoB advising website for options.

Completion of Information Technology Literacy Requirement

Finance Minor

15 semester hours in minor (3000-level or above)

Elective Courses - See advisor for approved course listing.	15
Total Hours	15

International Business Minor

15 semester hours in minor (3000-level or above)

FINC 5510	Multinational Financial Management	3
ECON 4300	International Economics	3
MKTG 4400	International Marketing	3
Elective Courses - See advisor for approved course listing.		6
Total Hours		15

Department of Management

The Management Program prepares students in basic business functions as well as the process of management. The professional programs within the Department of Management are designed to impart knowledge that will assist future managers to be good decision makers for their organizations. The professional programs available are Human Resources Management (HRMN), Business Administration (BSAD), Management (MNGT), and Entrepreneurship and Family Business (ENFB). College of Business pre-requisites are strictly enforced. Junior standing and compliance with College of Business academic standards are required for all 3000 and above level courses.

Human Resources Management

The Human Resources Management Program provides a comprehensive education in human resources management. The primary goals are to provide knowledge and experience, oriented toward practical, on-the-job applications and to prepare students for entry-level positions in private and public sector organizations. In addition, the Program provides excellent preparation for graduate or professional studies in Human Resources Management.

Business Administration

The Business Administration program is an interdepartmental degree designed to provide maximum course flexibility and a broadbased preparation for future career opportunities. Students are required to demonstrate basic oral and written communication skills, familiarity with technological tools, and an understanding of the interrelationship between the United States and foreign countries with a comprehensive education in business management. The Business Administration program prepares students for entry-level managerial and staff responsibilities in business, government, and non-profit organizations.

Entrepreneurship and Family Business

The Entrepreneurship and Family Business program offers an opportunity for students to gain insight into the criteria necessary for new ventures and for the managing of family-oriented business endeavors. Focus of the curriculum is on both start-up activities and the development of skills necessary to manage publicly-held and privately-owned entrepreneurial operations.

Management

The Management program provide a student a comprehensive overview of the skills necessary to compete in a managerial position in business. The program emphasizes such areas as behavioral dynamics, leadership skills, project management, business processes and logistics, international relations, as well as the management of information technology. It is designed to focus on those issues generic to both the manufacturing and service industries. These management skills, when complemented with the solid foundation provided by the Business core courses, equip students with the necessary knowledge to become successful managers. One unique aspect of the program is a community service project geared toward helping the students understand the importance of community service and philanthropy in today's global economy.

Majors

- Human Resources Management (p. 184)
- Business Administration (p. 182)
- Entrepreneurship and Family Business (p. 183)
- Management (p. 185)

Curriculum in Business Administration

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
World History I or II	3	World History I or II or Social Science Core Elective	3
MATH 1680 Calculus with Business Applications I	4	COMP 1000 Personal Computer Applications or 1003 Personal Computer Applications	2
Core Science I	4	Core Science II	4
BUSI 1010 Contemporary Issues in Business Administration I	1	BUAL 2600 Business Analytics I	3
		BUSI 2100 Oral Communication for Business	1
	15		16

Sophomore

Fall	Hours	Spring	Hours
ECON 2020 Principles of Microeconomics	3	PHIL 1020 Introduction to Ethics or 1040 Business Ethics	3
Core Literature	3	ECON 2030 Principles of Macroeconomics	3
Core Fine Arts	3	Core Literature II or Humanities Core Elective	3
Social Science Core Elective	3	ACCT 2210 Principles of Managerial Accounting	3

ACCT 2110 Principles of Financial Accounting	3	ACCT 2700 Business Law	3
BUSI 2010 Contemporary Issues in Business Administration	1		
	16		15
Junior			
Fall	Hours	Spring	Hours
MKTG 3310 Principles of Marketing	3	FINC 3610 Principles of Business Finance	3
MNGT 3100 Principles of Management	3	Business Elective ¹	6
ISMN 3140 Introduction to Management Information Systems	2	MNGT Elective ²	3
BUAL 3600 Business Analytics II	3	Elective	3
SCMN 3150 Ops: Mngt of Business Proces	2		
Elective	3		
	16		15
Senior			
Fall	Hours	Spring	Hours
Accounting or Finance Elective	3	MNGT 4800 Strategic Management	3
Business Elective ¹	3	Marketing or Supply Chain Elective	3
International Business Elective ³	3	Business Elective ¹	6
Business Elective ¹	3	Elective	3
Elective	3	UNIV 4AA0 University Graduation	0
	15		15
Total Hours: 123			

¹ Business Electives must be at the 3000- to 5000-level See CoB advising website for approved business electives.

² MNGT Elective may be fulfilled by any 3000-5000 level MNGT, ENFB, HRMN or ISMN course (with the exceptions shown on CoB advising website).

³ INTL Elective – choose one from the following: MNGT 4100, MKTG 4400, ECON 4300, FINC 3100, FINC 5510, SCMN 4800

Curriculum in Entrepreneurship and Family Business

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
World History I or II	3	World History I or II or Social Science Core Elective	3
MATH 1680 Calculus with Business Applications I	4	Core Science II	4
Core Science I	4	BUAL 2600 Business Analytics I	3
BUSI 1010 Contemporary Issues in Business Administration I	1	COMP 1000 Personal Computer Applications or 1003 Personal Computer Applications	2
		BUSI 2100 Oral Communication for Business	1
	15		16

Sophomore

Fall	Hours	Spring	Hours
ECON 2020 Principles of Microeconomics		3 PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3
Core Literature		3 ECON 2030 Principles of Macroeconomics	3
Core Fine Arts		3 Core Literature II or Humanities Core Elective	3
Social Science Core Elective		3 ACCT 2210 Principles of Managerial Accounting	3
ACCT 2110 Principles of Financial Accounting		3 ACCT 2700 Business Law	3
BUSI 2010 Contemporary Issues in Business Administration		1	
	16		15

Junior

Fall	Hours	Spring	Hours
FINC 3610 Principles of Business Finance		3 FINC 3620 Small Business Finance	3
MKTG 3310 Principles of Marketing		3 Entrepreneurship Elective ¹	3
MNGT 3100 Principles of Management		3 ENFB 4170 Managing Entrepreneurial Start-Ups	3
BUAL 3600 Business Analytics II		3 ISMN 3140 Introduction to Management Information Systems	2
ENFB 4140 Essentials of Entrepreneurship		3 SCMN 3150 Ops: Mngt of Business Proces Elective	2 3
	15		16

Senior

Fall	Hours	Spring	Hours
HRMN Elective ¹		3 MNGT 4800 Strategic Management	3
Business Elective ²		3 ENFB 4180 Growth Strategies for Emerging Companies	3
ENFB 4190 New Venture Creation		3 ENFB 4200 Business Plan for the New Venture	3
Entrepreneurship Elective ¹		3 Elective	6
Elective		3 UNIV 4AA0 University Graduation	0
	15		15

 Total Hours: 123

¹ See CoB advising website for ENFB and HRMN electives.

² Business elective must be at the 3000 to 5000 level. See CoB advising website for approved business electives.

<http://business.auburn.edu/academics/departments/departments-of-management>

Curriculum in Human Resources Management

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
World History I or II		3 World History I or II or Social Science Core Elective	3

MATH 1680 Calculus with Business Applications I	4	Core Science II	4
Core Science I	4	COMP 1000 Personal Computer Applications or 1003 Personal Computer Applications	2
BUSI 1010 Contemporary Issues in Business Administration I	1	BUAL 2600 Business Analytics I	3
		BUSI 2100 Oral Communication for Business	1
	15		16

Sophomore

Fall	Hours	Spring	Hours
ECON 2020 Principles of Microeconomics	3	PHIL 1020 Introduction to Ethics or 1040 Business Ethics	3
Social Science Core Elective	3	ECON 2030 Principles of Macroeconomics	3
Core Literature	3	Core Literature II or Humanities Core Elective	3
Core Fine Arts	3	ACCT 2210 Principles of Managerial Accounting	3
ACCT 2110 Principles of Financial Accounting	3	ACCT 2700 Business Law	3
BUSI 2010 Contemporary Issues in Business Administration	1		
	16		15

Junior

Fall	Hours	Spring	Hours
MNGT 3100 Principles of Management	3	FINC 3610 Principles of Business Finance	3
BUAL 3600 Business Analytics II	3	MNGT 3460 Organizational Behavior	3
MKTG 3310 Principles of Marketing	3	HRMN 5540 Human Resources Selection and Placement	3
HRMN 3420 Human Resource Management	3	HRMN Elective	3
Elective	3	Elective	3
	15		15

Senior

Fall	Hours	Spring	Hours
HRMN 5470 Employee Compensation	3	MNGT 4800 Strategic Management	3
HRMN Elective	3	HRMN 5510 Human Resource Planning, Development, and Appraisal	3
Elective	9	HRMN Elective	3
		Elective	7
		UNIV 4AA0 University Graduation	0
	15		16

Total Hours: 123

Students not passing the University IT examination must take COMP 1000.

HRMN electives must be selected from an approved listing.

Curriculum in Management

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
World History I or II		3 World History I or II or Social Science Core Elective	3
MATH 1680 Calculus with Business Applications I		4 Core Science II	4
Core Science I		4 BUAL 2600 Business Analytics I	3
BUSI 1010 Contemporary Issues in Business Administration I		1 COMP 1000 Personal Computer Applications <i>or</i> 1003 Personal Computer Applications	2
		BUSI 2100 Oral Communication for Business	1
		15	16
Sophomore			
Fall	Hours	Spring	Hours
ECON 2020 Principles of Microeconomics		3 ECON 2030 Principles of Macroeconomics	3
Core Literature		3 Core Literature II or Humanities Core Elective	3
Core Fine Arts		3 PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3
Social Science Core Elective		3 ACCT 2210 Principles of Managerial Accounting	3
ACCT 2110 Principles of Financial Accounting		3 ACCT 2700 Business Law	3
BUSI 2010 Contemporary Issues in Business Administration		1	
		16	15
Junior			
Fall	Hours	Spring	Hours
MNGT 3100 Principles of Management		3 MKTG 3310 Principles of Marketing	3
ISMN 3140 Introduction to Management Information Systems		2 MNGT 3460 Organizational Behavior	3
SCMN 3150 Ops: Mngt of Business Proces		2 SCMN 3710 Logs: Mngt of Fulfillment Proc	3
FINC 3610 Principles of Business Finance		3 Designated Financial Elective	3
Free Elective		2 Free Elective	3
BUAL 3600 Business Analytics II		3	
		15	15
Senior			
Fall	Hours	Spring	Hours
MNGT 4600 Community Service Project		1 MNGT 4800 Strategic Management	3
HRMN 3420 Human Resource Management		3 ENFB 4140 Essentials of Entrepreneurship ¹	3
Designated Supply Chain Elective		3 ISMN 5370 Project Management	3
Designated International Elective		3 Designated Human Resources Elective	3
Designed Info Systems Elective		3 Free Elective	3
Free Elective		3 UNIV 4AA0 University Graduation	0
		16	15

Total Hours: 123

¹ MNGT 4400 or MNGT 4690 may be substituted for ENFB 4140.

Marketing

Marketing majors discover the interrelationship of marketing with other management tools and prepare themselves for executive/managerial careers involving functional areas such as advertising, channel and product decision-making, pricing, retailing and strategic marketing. College of Business pre-requisites are strictly enforced. Junior standing and compliance with College of Business academic standards are required for all 3000 and above level courses.

Major

- Marketing (p. 187)

Minor

- Marketing (p. 188)

Curriculum in Marketing

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
World History I or II		3 World History I or II or Social Science Core Elective	3
MATH 1680 Calculus with Business Applications I		4 Core Science II	4
Core Science I		4 BUAL 2600 Business Analytics I	3
BUSI 1010 Contemporary Issues in Business Administration I		1 COMP 1000 Personal Computer Applications or 1003 Personal Computer Applications	2
	15		15

Sophomore

Fall	Hours	Spring	Hours
ECON 2020 Principles of Microeconomics		3 PHIL 1020 Introduction to Ethics or 1040 Business Ethics	3
Core Literature		3 ECON 2030 Principles of Macroeconomics	3
Core Fine Arts		3 Core Literature II or Humanities Core Elective	3
Social Science Core Elective		3 ACCT 2210 Principles of Managerial Accounting	3
ACCT 2110 Principles of Financial Accounting		3 ACCT 2700 Business Law	3
BUSI 2010 Contemporary Issues in Business Administration		1	
Elective		1	
	17		15

Junior

Fall	Hours	Spring	Hours
MNGT 3100 Principles of Management		3 ISMN 3140 Introduction to Management Information Systems	2
BUAL 3600 Business Analytics II		3 SCM 3150 Ops: Mngt of Business Proces	2
FINC 3610 Principles of Business Finance		3 Marketing Elective ¹	9
COMM 1000 Public Speaking		3 Elective	3

MKTG 3310 Principles of Marketing ¹	3		
	15	16	
Senior			
Fall	Hours	Spring	
		Hours	
MKTG 4360 Marketing Research ¹	3	MNGT 4800 Strategic Management	3
Marketing Elective	6	MKTG 4980 Marketing Strategy	3
Elective	6	Elective	9
		UNIV 4AA0 University Graduation	0
	15		15
Total Hours: 123			

¹ Must earn a "C" or better in each course.

Marketing Minor

MKTG 3310 and 15 hours of marketing electives.

MKTG 3310	Principles of Marketing	3
Elective Courses - See advisor for approved course listing.		15
Total Hours		18

Majors

- Accountancy (p. 168)
- Aviation Management (p. 171)
- Business Administration (p. 182)
- Business Analytics (p. 173)
- Entrepreneurship and Family Business (p. 183)
- Finance (p. 179)
- Human Resources Management (p. 184)
- Information Systems Management (p. 174)
- International Business (p. 180)
- Management (p. 185)
- Marketing (p. 187)
- Professional Flight Management (p. 175)
- Supply Chain Management (p. 176)

Minors

College of Education

BETTY LOU WHITFORD, *Dean*

SUSAN K. VILLAUME, *Associate Dean*

THE COLLEGE OF EDUCATION prepares competent, committed, and reflective professionals to help build a better future for individuals, our state, our nation, and our world. Teacher education as well as health- and rehabilitation-related majors are offered in the

college's four academic departments: Curriculum and Teaching; Educational Foundations, Leadership, and Technology; Kinesiology; and Special Education, Rehabilitation, and Counseling.

Undergraduate Program Information

- Admission to the College
- Teacher Education Majors
 - Accreditation and approvals
 - Field experiences
 - Admission to teacher education
 - Admission to internship
 - Graduation
 - Certification
 - Assurance of competence
- Health- and Rehabilitation-related Majors
- Majors with Restricted Enrollment
 - Early Childhood Education
 - Elementary Education
 - Exercise Science
- Undergraduate Majors
- Undergraduate Minors
- Dual Objectives Program
- Non-degree Program

Graduate Programs Information

Learning Resources Center

Undergraduate Program Information

Admission to the College

Freshman eligibility is determined by the Office of Enrollment Services and is outlined elsewhere in this *Bulletin*. Transferring into a teacher education program requires a minimum 2.5 GPA on all college coursework attempted and on all coursework attempted at Auburn. Transfers from other institutions must apply through the Office of Enrollment Services. On-campus students may request a transfer into the college by contacting Professional Education Services, 3464 Haley Center.

College of Education students are charged a fee for professional liability insurance.

Teacher Education Majors

The college's teacher education majors are designed to ensure that program graduates have the knowledge, skills, and dispositions to help all students learn. These programs maintain selective admission, retention, and graduation requirements and are in compliance with the Alabama State Board of Education's rules for teacher education.

Accreditation and Approvals

Auburn University's College of Education is accredited by the National Council for Accreditation of Teacher Education (NCATE). All programs preparing teachers and other professional school personnel are approved by the Alabama State Board of Education. In addition, the state of Alabama signs the National Association of State Directors of Education and Certification (NASDTEC) Interstate Agreement which facilitates the applications of AU's graduates when they apply for certification in other states.

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Field Experiences

Students in teacher education programs participate in sequential learning opportunities in public school and community settings throughout their programs.

The pre-teaching experience is a prerequisite for admission to Teacher Education. This five-day experience is intended to provide the opportunity for students to observe the school as a total organization and increase their awareness of the teaching profession. The primary focus is observation and reflection.

Additional field experiences are conducted concurrently with enrollment in professional education courses. These pre-internship experiences provide students with multiple opportunities to work with diverse learners in schools and communities.

Internship is the culminating field-based experience and spans a full semester. This experience immerses interns in the learning community and provides them with intensive and extensive opportunities to develop and demonstrate competence in the professional roles for which they are preparing.

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Admission to Teacher Education

The first transition point in teacher education programs is admission to teacher education. Criteria are noted below.

- Completion and submission of the Admission to Teacher Education Application
- Completion of 45 semester hours in the program
- Satisfactory completion or current enrollment in the orientation course
- Minimum 2.50 grade-point average on all college coursework attempted as well as all coursework attempted at Auburn, in professional studies, and in the teaching field
- Satisfactory performance in the pre-teaching experience
- A passing score on each of the Alabama Prospective Teacher Testing Program's basic skills assessments (Applied Mathematics, Reading for Information, and Writing assessments)
- Documentation of clear background check
- Satisfactory completion of a professional interview

Students who fail to meet these criteria upon initial application may submit new evidence in an effort to satisfy admission to teacher education requirements. Meeting the above criteria at a minimum level does not guarantee admission into teacher education. Two teacher education programs, early childhood education and elementary education, have restricted enrollments. For additional information about admission to these programs, see section below on Undergraduate Programs with Restricted Enrollments.

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Admission to Internship

The second transition point in teacher education programs is admission to internship. Criteria are noted below.

- Completion and submission of the Internship Application one year in advance
- Admission to Teacher Education
- Satisfactory completion of all courses on the program checklist designated as prerequisites for internship
- Minimum 2.50 grade-point average on all college coursework attempted as well as all coursework attempted at Auburn, in professional studies, and in the teaching field
- No grade below a C in professional studies courses
- Passing score(s) on the appropriate Alabama Prospective Teacher Testing Program's Praxis II subject assessment(s)
- Demonstrated potential for teaching with departmental approval

Students who fail to meet these criteria may submit new evidence in an effort to satisfy admission to internship requirements.

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Graduation

To be eligible for graduation, students must meet the following criteria.

- Registration for ED1 (graduation check)
- Completion of all courses on the program checklist (Note: Approvals of Course Substitution Request's must be on file in Professional Education Services, 3464 Haley.)
- Minimum 2.50 grade-point average on all college coursework attempted as well as all coursework attempted at Auburn, in professional studies, and in the teaching field

- No grade below a C in professional studies courses
- Satisfactory performance in internship including satisfactory completion of required internship assessments

Certification

The associate dean for academic affairs has been designated as the teacher certification officer for Auburn University. To obtain certification in the state of Alabama, program graduates must submit a completed certification application with required processing fee to Professional Education Services, 3464 Haley Center.

Program graduates who delay obtaining Alabama certification may be subject to changes made in teacher certification requirements between the time of graduation and the time of the certification request. Students seeking certification in other states should contact those state certification offices to obtain their application forms and requirements.

The following table shows undergraduate teacher education program by department and by grade levels of certification. Music Education (P-12) and secondary education programs in English language arts, foreign language, mathematics, science, and social science meet the university requirements for an academic major.

Department and Program	Grade Levels				
	P-3	K-6	4-8*	6-12	P-12
Department of Curriculum and Teaching					
Business and Marketing Education				X	
Chemistry Education				X	
Early Childhood Education	X				
Elementary Education		X			
English Language Arts Education/ English			*	X	
French Education			*	X	
General Science Education/Biology			*	X	
General Social Science Education/ History			*	X	
German Education			*	X	
Mathematics Education			*	X	
Music Education, Instrumental and Vocal					X
Physics Education				X	
Spanish Education			*	X	
Department of Kinesiology					
Physical Education/ Teacher Education					X
Department of Special Education, Rehabilitation, and Counseling					

Collaborative Teacher	X	X
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Early Childhood
Special Education
(birth through 8
years)

- * Students completing these secondary education (6-12) programs may complete additional coursework to add a middle school (4-8) teaching endorsement.

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Assurance of Competence

The College of Education guarantees the success of graduates who receive initial professional certification through the college and who are employed within their area(s) of specialization. The college will provide remediation at no cost to an individual who was recommended for certification by the College of Education and whose job performance within two years after program completion is deemed unsatisfactory by a local education agency based on performance evaluations established by the Alabama State Board of Education.

Health- and Rehabilitation-related Majors

Exercise science and physical activity and health (including an option in fitness, conditioning and performance) are offered in the Department of Kinesiology. Rehabilitation and Disability Studies is offered in the Department of Special Education, Rehabilitation, and Counseling.

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Majors with Restricted Enrollments

Due to high demand, three College of Education undergraduate majors have restricted enrollments: early childhood education, elementary education, and exercise science. Information about admissions into these programs is noted below.

Early Childhood Education

A total of 75 early childhood education applicants are admitted to teacher education each year with admission decisions occurring in fall and spring. Applications are considered only if students have met all criteria noted in the Admission to Teacher Education section above with the exception of the professional interview. Fall semester 25 applicants are accepted and begin a cohort sequence the following spring; spring semester, 50 applicants are admitted to begin a cohort sequence either summer term (25) or fall semester (25). Rankings for early childhood education are determined by the overall GPA (all course work completed at Auburn and transfer) and a professional interview which includes review of a resume, a writing sample and a face-to-face interview.

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Elementary Education

A total of 75 elementary education applicants are admitted each year with admission decisions occurring in fall and spring. Applications are considered only if students have met all criteria noted in the Admission to Teacher Education section above. Fall semester 25 applicants are accepted and begin a cohort sequence the following spring semester; spring semester 50 applicants are accepted and begin a cohort sequence the following fall semester. Rankings for elementary education applicants are determined by the overall GPA (all course work completed at Auburn and transfer) and a professional interview which includes a review of a resume, a writing sample, and a face-to-face interview.

Exercise Science

A total of 60 exercise science applicants are admitted each year to a junior level cohort (30 students admitted spring to begin a four semester sequence the following fall and 30 students admitted fall to begin the four semester sequence the following spring). To be eligible to apply for the exercise science program, applicants must fulfill the following minimum requirements: (1) minimum GPA of 2.5 on all college coursework attempted and all coursework attempted at Auburn University; (2) completion of 30 hours of AU core coursework (must include ENGL 1100, ENGL 1100, and BIOL 1020/BIOL 1021); (3) completion of BIOL 1020/BIOL 1021 with a C or better; completion of 4 additional hours of science required in the exercise science program (i.e., BIOL 1030/BIOL 1031, BIOL 2500, BIOL 2510, PHYS 1500, CHEM 1030/BIOL 1031); (4) completion and submission of application, including a resume and a 300 word

essay explaining the applicant's interest in the desired major and career goals. Final decisions regarding admission are based on completion of all requirements noted above, the English GPA, and the science GPA.

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Undergraduate Majors

- Agriscience Education (p. 195)
- Business and Marketing Education (p. 197)
- Chemistry Education (p. 198)
- Collaborative Teacher Education (p. 223)
- Foreign Language Education/French (p. 204)
- Foreign Language Education/German (p. 206)
- Foreign Language Education/Spanish (p. 207)
- Early Childhood Education (p. 199)
- Early Childhood Special Education (p. 225)
- Elementary Education (p. 201)
- English Language Arts Education/English (p. 202)
- Exercise Science (p. 219)
- Fitness, Conditioning and Performance (p. 220)
- General Science Education/Biology (p. 208)
- General Social Science Education/History (p. 209)
- Geography Education (p. 211)
- Mathematics Education (p. 212)
- Music Education/Instrumental and Vocal (p. 213)
- Physical Education/Teacher Education (p. 215)
- Physical Activity and Health (p. 221)
- Physics Education (p. 216)
- Rehabilitation and Disability Studies (p. 226)

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Undergraduate Minors

- Community Music (p. 195)
- Office Systems Management (p. 217)

Dual Objectives Program

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Non-degree Program

The Physical Activity and Wellness Program is a non-degree program that requires 8 hours (4 courses), including KINE 1100, Wellness, and 3 courses (each one from a different category of physical activity). Categories include cardio-respiratory fitness (PHED 1200), fitness and conditioning (PHED 1300), team sports (PHED 1400), individual sports (PHED 1500), performance activities (PHED 1600), and aquatic skills (PHED 1700). Students who complete the 8-hour program may apply for a Physical Activity and Wellness Certificate, issued by the Department of Kinesiology. Students may also elect to take individual courses, without completing the 8-hour program. Of course, students may elect to take more than 4 courses if they desire to use the program to ensure a regular physical activity program.

Graduate Programs

The College of Education offers graduate programs that prepare professionals in the fields of education, kinesiology, counseling, and rehabilitation. Offerings include M.Ed., M.S., Ed.S., and Ph.D. degree programs, graduate minors, and graduate certificates. Alternative master's certification degree programs offer qualified individuals who hold non-teaching baccalaureate degrees a route to initial teacher certification while simultaneously earning a master's degree.

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Learning Resources Center

The Learning Resources Center (LRC), located in 3408/3410 Haley Center, is a service unit for the College of Education. The LRC provides instructional technology services which include video recordings, computer software, audio recordings, kits, books, and periodicals for the education profession. Two computer classrooms, a Micro-Center, and the college computer network are managed by the LRC. LRC personnel assist faculty and students with the production, selection, and utilization of newer instructional and informational technologies. Distance education technologies and support services are provided. Art design and digital document production services are available to College of Education faculty and staff.

The College of Education offers graduate programs that prepare professionals in the fields of education, kinesiology, counseling, and rehabilitation. Offerings include M.Ed., M.S., Ed.S., and Ph.D. degree programs, graduate minors, and graduate certificates. Alternative master's certification degree programs offer qualified individuals who hold non-teaching baccalaureate degrees a route to initial teacher certification while simultaneously earning a master's degree.

Departments

- Curriculum and Teaching - MEd, MS, EdS, PhD (p. 499)
- Counselor Education and Counseling Psychology - MEd, MS, PhD (p. 498)
- Educational Foundations, Leadership and Technology - MEd, MS, EdS, PhD (p. 504)
- Kinesiology - MEd, MS, EdS, PhD (p. 521)
- Special Education, Rehabilitation, & Counseling MEd, MS, PhD (p. 543)

Curriculum and Teaching

The Department of Curriculum and Teaching (http://www.education.auburn.edu/academic_departments/curr) prepares teachers in content-specific research-based pedagogy. Departmental faculty and school professionals partner to provide rich clinical experiences in diverse settings. All educator preparation programs are approved by the Alabama State Board of Education. Auburn University's College of Education is accredited through the National Council for Accreditation of Teacher Education (NCATE). Music education programs are also accredited by the National Association of Schools of Music (NASM).

Elementary education and early childhood education majors are high demand majors. Due to limited enrollment, all students who meet minimum criteria may not be admitted. Click [here](#) (p. 192) for additional information.

In addition to undergraduate teacher education majors, the department offers undergraduate minors in community music and office systems management.

The Auburn University schedule of courses (https://ssbprod.auburn.edu/pls/PROD/bwckschd.p_disp_dyn_sched) is available on the Auburn University website. Information about graduate programs is available at Curriculum and Teaching - MEd, MS, EdS, PhD (http://bulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/curriculumandteachingmedmsedsphd_major) .

The Department of Curriculum and Teaching offers the following undergraduate and minors.

Undergraduate Majors

- Agriscience Education (p. 195)
- Business and Marketing Education (p. 197)
- Early Childhood Education (p. 199)
- Elementary Education (p. 201)
- English Language Arts Education/English (p. 202)
- Foreign Language Education/French (p. 204)
- Foreign Language Education/German (p. 206)
- Foreign Language Education/Spanish (p. 207)
- General Science Education/Biology (p. 208)
- Geography Education (p. 211)
- Chemistry Education (p. 198)

- Physics Education (p. 216)
- General Social Science Education/History (p. 209)
- Mathematics Education (p. 212)
- Music Education/Instrumental and Vocal (p. 213)

Undergraduate Minors

- Community Music (p. 195)
- Office Systems Management (p. 217)

Minors

- Community Music (p. 195)
- Office Systems Management (p. 217)

Community Music Minor

Required coursework (9 hours):

CTMU 1010	Introduction to Music Education	1
CTMU 1020	Music Education Lab I	1
CTMU 2010	Music Education Lab II	1
CTMU 4910/4913	Practicum in Area of Specialization	6
Select two of the following 4 hour courses:		8
CTMU 5110	Children's Music Learning	
CTMU 5120	School and Community General Music Education	
CTMU 5130	School and Community Instrumental Music Education	
CTMU 5140	School and Community Vocal Music Education	
Total Hours		17

Curriculum in Agriscience Education

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
MATH 1130 Pre-Calculus Trigonometry		3 Core History or Core Social Science	3
Core History ¹		3 Approved Humanities Choice ³	3
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory		4 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
EDUC 1010 Orientation to Teacher Education ²		1 Elective or ROTC	3
	14		16

Sophomore

Fall	Hours	Spring	Hours
CHEM 1010 Survey of Chemistry I		3 ECON 2020 Principles of Microeconomics	3
CHEM 1011 Survey of Chemistry I Laboratory		1 Core Literature or Core Humanities	3
Core Literature ¹		3 Core Fine Arts	3
Core Social Science ⁴		3 ANSC 1000 Introduction to Animal Sciences	4

HORT 2020 Horticulture Crop Production	3	EDMD 3300 Utilization of Instructional Technology for Educators ²	2
Ag Elective ⁵	3	CTCT 4940/4943 Directed Field Experience in Area of Specialization	1
	16		16
Junior			
Fall	Hours	Spring	Hours
AGRN 2040/2043 Basic Soil Science		4 AGECE 3010 Agribusiness Marketing or 4000 Principles of Agribusiness Management	3
FOUN 3000 Diversity of Learners and Settings ²	3	CTCT 2100 Power Equipment Technology	3
RSED 3000/3003 Diversity and Exceptionality of Learners ²	3	CTCT 4900 Directed Studies or 4910 Practicum in Area of Specialization	2
HORT 2210 Landscape Gardening	4	Ag Electives ⁵	3
Ag Electives ⁵	3	FOUN 3110 Adolescent Development, Learning, Motivation and Assessment I ^{2,6}	3
		FOUN 3120 Adolescent Development, Learning, Motivation and Assessment II ^{2,6}	3
	17		17
Senior			
Fall	Hours	Spring	Hours
ENVI 1020 Fundamentals of Environmental Science	2	CTCT 5060 Program Planning in Area of Specialization ^{2,7}	3
CTCT 4000/4003 Classroom/Laboratory Management, Organization and Evaluation in Career and Technical Education ^{2,6}	2	CTCT 4920/4923 Internship ⁸	10
CTCT 5050/5053 Methods of Teaching in Area of Specialization ^{2,6}	3	UNIV 4AA0 University Graduation	0
CTCT 4140 Agricultural Structure and Metal Fabrication Technology	3		
FISH 5210 Principles of Aquaculture or 5520 Small Impoundment Management	3		
Ag Electives ⁵	3		
	16		13
Total Hours: 125			

- ¹ Students must complete a history sequence or a literature sequence. Students must complete a history sequence or a literature sequence.
- ² Prerequisite for Admission to Internship.
- ³ PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050 /PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)
- ⁴ One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017,HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9)
- ⁵ Agriculture Elective: See advisor for approved course listing.
- ⁶ Prerequisite: Admission to Teacher Education.

⁷ Co-requisite with Internship.

⁸ Co-requisite with Internship.

Curriculum in Business and Marketing Education

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History ¹	3	Core History or Core Social Science	3
Core Social Science ²	3	Core Math	3
Core Fine Arts	3	ECON 2020 Principles of Microeconomics	3
EDUC 1010 Orientation to Teacher Education ³	1		
	13		12

Sophomore

Fall	Hours	Spring	Hours
ACCT 2110 Principles of Financial Accounting	3	ACCT 2700 Business Law	3
Core Literature ¹	3	Core Literature or Core Humanities	3
Core Science I	4	Core Science II	4
Approved Humanities Choice ⁴	3	FINC 2400 Personal Finance	3
CTCT 2200/2203 Document Processing	3	EDMD 3300 Utilization of Instructional Technology for Educators	2
	16		15

Junior

Fall	Hours	Spring	Hours	Summer	Hours
Electives	3	FOUN 3110 Adolescent Development, Learning, Motivation and Assessment I ^{3,5}	3	CTCT 4940/4943 Directed Field Experience in Area of Specialization	3
FOUN 3000 Diversity of Learners and Settings ³	3	FOUN 3120 Adolescent Development, Learning, Motivation and Assessment II ^{3,5}	3	CTCT 4970 Special Topics in Area of Specialization	3
RSED 3000/3003 Diversity and Exceptionality of Learners ³	3	CTCT 3200/3203 Records Management	2	CTCT 5080/5083 Coordination and Supervision of Work-Based Learning ⁵	3
MKTG 3310 Principles of Marketing	3	CTCT 3250/3253 Information Processing II	3		
CTCT 3240/3243 Information Processing I	3	ENGL 3080 Business Writing	3		
MNGT 3100 Principles of Management	3	CTCT 4200/4203 Managing Office Systems	3		
	18		17		9

Senior

Fall	Hours Spring	Hours
CTCT 3000/3003 Leadership Skills for Personal and Organizational Development	3 CTCT 5060 Program Planning in Area of Specialization ^{3,6}	3
CTCT 4000/4003 Classroom/Laboratory Management, Organization and Evaluation in Career and Technical Education ^{3,5}	2 CTCT 4920/4923 Internship ⁷	10
CTCT 5050/5053 Methods of Teaching in Area of Specialization ^{3,5}	3 UNIV 4AA0 University Graduation	0
	8	13

 Total Hours: 121

- ¹ Students must complete a history sequence or a literature sequence.
- ² One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017, HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9)
- ³ Prerequisite for Admission to Internship.
- ⁴ PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050 /PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)
- ⁵ Prerequisite: Admission to Teacher Education.
- ⁶ Co-requisite with Internship.
- ⁷ Prerequisite: Admission to Internship (application for internship is one year in advance).
- ⁸ Directed Elective: See advisor for approved course listing.

Curriculum in Chemistry Education/Chemistry

Freshman

Fall	Hours Spring	Hours
ENGL 1100 English Composition I	3 ENGL 1120 English Composition II	3
MATH 1610 Calculus I or 1617 Honors Calculus I	4 MATH 1620 Calculus II	4
Core History I	3 Core History II	3
Core Fine Arts	3 Approved Humanities Choice ¹	3
CHEM 1110 General Chemistry I	3 CHEM 1120 General Chemistry for Scientists and Engineers II	3
CHEM 1111 General Chemistry I Laboratory	1 CHEM 1121 General Chemistry II Laboratory	1
	EDUC 1010 Orientation to Teacher Education ⁵	1
	17	18

Sophomore

Fall	Hours Spring	Hours
PHYS 1500 General Physics I	4 PHYS 1510 General Physics II	4
Core Literature	3 Core Social Science ²	3
Core Social Science ²	3 COMM 1000 Public Speaking	3

CHEM 2070 Organic Chemistry I	3 Free Elective	3
CHEM 2071 Organic Chemistry I Laboratory	1 CHEM 2080 Organic Chemistry II	3
	CHEM 2081 Organic Chemistry II Laboratory	1
	14	17

Junior

Fall	Hours Spring	Hours
FOUN 3000 Diversity of Learners and Settings ⁵	3 CHEM 3000 Chemical Literature	1
RSED 3000/3003 Diversity and Exceptionality of Learners ⁵	3 FOUN 3110 Adolescent Development, Learning, Motivation and Assessment I ^{3,5}	3
CHEM 3050 Analytical Chemistry	3 Chemistry Elective	4
CHEM 3051 Analytical Chemistry Laboratory	1 CHEM 3160 Survey of Physical Chemistry	3
CTSE 4000 Technology in Science Education ⁵	2 CTSE 4090 Curriculum and Teaching I: Science ^{3,5}	4
Chemistry Elective	4	
	16	15

Senior

Fall	Hours Spring	Hours
FOUN 3120 Adolescent Development, Learning, Motivation and Assessment II ^{3,5}	3 CTSE 4920 Internship ⁴	10
CHEM 5180 Biochemistry I	3 CTSE 4200/4203 Managing Middle and High School Classrooms ^{3,6}	2
CHEM 5181 Biochemistry I Laboratory	1 UNIV 4AA0 University Graduation	0
BIOL 1020 Principles of Biology	4	
CTSE 4100 Curriculum and Teaching II: Science ^{3,5}	4	
	15	12

 Total Hours: 124

- ¹ PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040 /PHIL 1050/PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)
- ² One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017,HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9)
- ³ Prerequisite: Admission to Teacher Education.
- ⁴ Prerequisite: Admission to Internship (application for internship is one year in advance).
- ⁵ Prerequisite for Admission to Internship.
- ⁶ Co-requisite with Internship.

Chemistry Elective: See advisor for approved course listing.

Curriculum in Early Childhood Education

Freshman

Fall	Hours Spring	Hours
ENGL 1100 English Composition I	3 ENGL 1120 English Composition II	3

Core History ¹	3 Core History or Core Social Science	3
Core Science I	4 Core Science II	4
Core Math	3 Core Social Science ³	3
Core Social Science ³	3 MATH 2850 Mathematics for Elementary Education I	3
EDUC 1010 Orientation to Teacher Education ⁴	1	
	17	16
Sophomore		
Fall	Hours Spring	Hours
EDMD 3300 Utilization of Instructional Technology for Educators ⁴	2 Core Literature ¹	3
Core Literature ¹	3 Core Fine Arts	3
Approved Humanities Choice ²	3 HDFS 2010 Lifespan Human Development in Family Context or PSYC 3120 Developmental Psychology	3
Science Elective with Lab	4 MATH 2870 Mathematics for Elementary Education III	3
MATH 2860 Mathematics for Elementary Education II	3 Electives	3
Electives	1	
	16	15
Junior		
Fall	Hours Spring	Hours
CTRD 3700 Fundamentals of Language and Literacy Instruction I ^{4,5}	3 ARTS 3010 Elementary School Art or EDMD 5100 Media for Children	3-4
CTEC 3020 Primary Math and Science ⁵	3 CTMU 3040 Music and Related Arts ⁵	4
FOUN 3000 Diversity of Learners and Settings ⁴	3 CTEC 4911 Practicum in the Preschool ^{4,5}	3
RSED 3000/3003 Diversity and Exceptionality of Learners ⁴	3 KINE 2250 Motor Development During the School Years	2
CTEC 3200 A Working Theory for the Constructivist Educator ^{4,5}	3 CTEC 3030 Intuitive Thought and Symbolic Function ⁵	3
	15	15-16
Senior		
Fall	Hours Spring	Hours
CTRD 3710 Fundamentals of Language and Literacy Instruction II ^{4,5}	3 CTEC 4210 The Constructivist Teacher: Growing Professionally ^{5,6}	3
CTEC 4200 The Constructivist Teacher: Strategies and Techniques ^{4,5}	3 CTEC 4920 Internship ⁷	10
FOUN 3100 Child Development, Learning, Motivation and Assessment ^{4,5}	6 UNIV 4AA0 University Graduation	0

CTEC 4912 Practicum in Primary Grades ^{4,5}	3	
	15	13

Total Hours: 122-123

Curriculum guides for the junior and senior year vary according to semester of admission to Teacher Education. Some curriculum guides include a summer term. See advisor.

- ¹ Students must complete a history sequence or a literature sequence.
- ² PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050 /PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)
- ³ One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017,HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9)
- ⁴ Prerequisite for Admission to Internship.
- ⁵ Prerequisite: Admission to Teacher Education.
- ⁶ Co-requisite with Internship.
- ⁷ Prerequisite: Admission to Internship (application for internship is one year in advance).

Curriculum in Elementary Education

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History ¹	3	Core History or Core Social Science	3
Core Science I	4	Core Science II	4
Core Math	3	MATH 2850 Mathematics for Elementary Education I	3
Core Social Science ³	3	Core Social Science ³	3
		EDUC 1010 Orientation to Teacher Education ⁴	1
	16		17

Sophomore

Fall	Hours	Spring	Hours
MATH 2860 Mathematics for Elementary Education II	3	MATH 2870 Mathematics for Elementary Education III (or Math Elective)	3
Core Literature ¹	3	Core Literature ¹	3
Approved Humanities Choice ²	3	Core Fine Arts	3
Science Elective with Lab	4	Approved HDFS or PSYC	3
EDMD 3300 Utilization of Instructional Technology for Educators ⁴	2	Elective	3
		FOUN 3000 Diversity of Learners and Settings ⁴	3
	15		18

Junior

Fall	Hours	Spring	Hours
CTEE 3100 Introduction to Elementary Education ^{4,5}	3	CTRD 3710 Fundamentals of Language and Literacy Instruction II ^{4,5}	3
CTRD 3700 Fundamentals of Language and Literacy Instruction I ^{4,5}	3	CTEE 4010 Curriculum: Social Science ^{4,5}	3
CTMU 3040 Music and Related Arts ⁵	4	CTEE 4020 Curriculum: Language Arts ^{4,5}	3
FOUN 3100 Child Development, Learning, Motivation and Assessment ^{4,5}	6	EDMD 5100 Media for Children	3
		RSED 3000/3003 Diversity and Exceptionality of Learners	3
	16		15

Senior

Fall	Hours	Spring	Hours
CTEE 4030 Curriculum: Natural Science ^{4,5}	3	CTEE 4920/4923 Internship ⁷	10
CTEE 4040 Curriculum: Mathematics ^{4,5}	3	CTEE 4950/4953 Professional Development Seminar ^{5,6}	2
CTEE 4190 Effective Classroom Management in the Elementary School ^{4,5}	3	UNIV 4AA0 University Graduation	0
KINE 4360 Health Education and Physical Education in Elementary Schools ⁵	3		
	12		12

Total Hours: 121

Curriculum guides for the junior and senior year vary according to semester of admission to Teacher Education. Some curriculum guides include a summer term. See advisor.

- ¹ Students must complete a history sequence or a literature sequence.
- ² PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050 /PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)
- ³ One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017,HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710 /HONR 2717 taken as Humanities(SLO9)
- ⁴ Prerequisite for Admission to Internship.
- ⁵ Prerequisite: Admission to Teacher Education.
- ⁶ Co-requisite with Internship.
- ⁷ Prerequisite: Admission to Internship (application for internship is one year in advance).

Curriculum in English Language Arts Education/English

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History	3	Core History or Core Social Science	3
Core Science I	4	Core Science II	4

Core Math	3	Approved Humanities Choice ¹	3
THEA 2010 Introduction to Theatre	3	COMM 1000 Public Speaking	3
		EDUC 1010 Orientation to Teacher Education ²	1
	16		17

Sophomore

Fall	Hours	Spring	Hours
Select one of the following sequences:		3 Select one of the following sequences:	3
ENGL 2230 British Literature before 1789 & ENGL 2250 American Literature before 1865		ENGL 2230 British Literature before 1789 & ENGL 2250 American Literature before 1865	
ENGL 2240 British Literature after 1789 & ENGL 2260 American Literature after 1865		ENGL 2240 British Literature after 1789 & ENGL 2260 American Literature after 1865	
Core Social Science ³	3	Core Social Science	3
Journalism Elective	3	Genre Literature	3
American or British Lit 2000 level ⁴	3	Author or Topic Literature	3
Period of British Literature	3	Literature Elective	3
Period of American Literature	3	EDMD 3300 Utilization of Instructional Technology for Educators ²	2
	18		17

Junior

Fall	Hours	Spring	Hours
FOUN 3000 Diversity of Learners and Settings ²	3	FOUN 3110 Adolescent Development, Learning, Motivation and Assessment I ^{2,5}	3
RSED 3000/3003 Diversity and Exceptionality of Learners ²	3	CTSE 4150 Curriculum and Teaching I: English Language Arts ^{2,5}	4
CTRD 5710 Literacy and Inquiry in the Content Areas: Grades 6-12 ^{2,5}	3	CTRD 5030 The Reading of Adolescents	3
CTSE 5010 Language Study for Teachers	3	English Ling/Rhet Elective Group 1 ⁷	3
CTSE 5020 Rhetoric and Composition for Teachers	3	ENGL 3130 Survey of Critical Theory	3
English Writing Elective Group 3 ⁶	3		
	18		16

Senior

Fall	Hours	Spring	Hours
FOUN 3120 Adolescent Development, Learning, Motivation and Assessment II ^{2,5}	3	CTSE 4920 Internship ⁹	10
CTSE 4160 Curriculum and Teaching II: English Language Arts ^{2,5}	4	CTSE 4200/4203 Managing Middle and High School Classrooms ^{5,10}	2
Eng. Globalism, Sustainability, of Div. Gp 2 ⁸	3	UNIV 4AA0 University Graduation	0
ENGL 4800 Seminar in Literature	3		
Literature Elective	3		
	16		12

Total Hours: 130

- 1 PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050 /PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)
- 2 Prerequisite for Admission to Internship.
- 3 One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017, HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9)
- 4 Select one of the following: ENGL 2230/ENGL 2240/ENGL 2250/ENGL 2260
- 5 Prerequisite: Admission to Teacher Education
- 6 Select one of the following: ENGL 2000/ENGL 2010/ENGL 3040/ENGL 3080/ENGL 4000/ ENGL 4010
- 7 Select one of the following: ENGL 3110/ENGL 3120/ENGL 4140/ENGL 4150/ENGL 4180/ ENGL 5410
- 8 Select one of the following: ENGL 3710/ENGL 3870/ENGL 4450/ENGL 4710/ENGL 4720
- 9 Prerequisite: Admission to Internship (application for internship is one year in advance).
- 10 Co-requisite with Internship.

Group 1 - Linguistics/Rhetoric

ENGL 3110	Survey of Linguistics	3
ENGL 3120	Survey of Rhetoric	3
ENGL 4140	Language Variation	3
ENGL 4150	Topics in Language Study	3
ENGL 4180	Rhetorical Theory and Practice	3
ENGL 5410	History of the English Language	3
Total Hours		18

Group 2 - Course in Globalism, Sustainability, or Diversity

ENGL 3710	Survey of African-American Literature	3
ENGL 3870	World English Literatures	3
ENGL 4450	Topics in African American Literature	3
ENGL 4710	Topics in Gender and Literature	3
ENGL 4720	Topics in Minority Voices in Literature	3
Total Hours		15

Group 3 - Writing elective

ENGL 2000	Introduction to Creative Writing	3
ENGL 2010	Introduction to Professional Writing	3
ENGL 3040	Technical Writing	3
ENGL 3080	Business Writing	3
ENGL 4000	Advanced Composition	3
ENGL 4010	Topics in Writing	3
Total Hours		18

Curriculum in Foreign Language Education/French

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History I	3	Core History II	3
Core Science I	4	Core Science II	4

Core Math	3	Approved Humanities Choice ²	3
FLFR 2010 Intermediate French I ¹	4	FLFR 2020 Intermediate French II ¹	4
		EDUC 1010 Orientation to Teacher Education ⁶	1
	17		18

Sophomore

Fall	Hours	Spring	Hours
FLFR 3010 French Phonetics and Diction		3 COMM 1000 Public Speaking	3
Core Literature		3 Core Social Science ³	3
Core Fine Arts		3 Free Elective	2
Core Social Science ³		3 FLFR 3110 French Civilization	3
FLFR 3030 French Conversation		3 FLFR 3040 French Composition	3
	15		14

Junior

Fall	Hours	Spring	Hours
FOUN 3000 Diversity of Learners and Settings ⁶		3 FOUN 3110 Adolescent Development, Learning, Motivation and Assessment I ^{4,6}	3
RSED 3000/3003 Diversity and Exceptionality of Learners ⁶		3 CTSE 4080/4083 Curriculum and Teaching II: Foreign Language ^{4,6}	4
FLFR 3100 Introduction to French Literature		3 FLFR Electives (3000 or above) ⁸	9
CTSE 4070/4073 Curriculum and Teaching I: Foreign Language ^{4,6}		4	
FLFR Elective (3000 or above) ⁸		3	
	16		16

Senior

Fall	Hours	Spring	Hours
FOUN 3120 Adolescent Development, Learning, Motivation and Assessment II ^{4,6}		3 CTSE 4920 Internship ⁵	10
EDMD 3300 Utilization of Instructional Technology for Educators ⁶		2 CTSE 4200/4203 Managing Middle and High School Classrooms ^{4,7}	2
FLFR Electives (3000 or above) ⁸		6 UNIV 4AA0 University Graduation	0
Free Elective		1	
	12		12

Total Hours: 120

¹ FLFR 1010 and FLFR 1020 may also be required based on placement test score.

² PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050 /PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)

³ One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017,HIST 1010/HIST 1017,HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9)

⁴ Prerequisite: Admission to Teacher Education.

⁵ Prerequisite: Admission to Internship (application for internship is one year in advance).

⁶ Prerequisite for Admission to Internship.

⁷ Co-requisite with Internship.

⁸ FLFR Elective: See advisor for approved course listing.

Curriculum in Foreign Language Education/German

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History I	3	Core History II	3
Core Math	3	Approved Humanities Choice ²	3
Core Science I	4	Core Science II	4
FLGR 2010 Intermediate German I ¹	4	FLGR 2020 Intermediate German II ¹	4
		EDUC 1010 Orientation to Teacher Education ⁶	1
	17		18

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Core Social Science ³	3
Core Fine Arts	3	COMM 1000 Public Speaking	3
Core Social Science ³	3	Elective	2
FLGR 3010 Beginning German Composition and Conversation	3	FLGR 3020 Intermediate German Composition and Conversation	3
FLGR 3110 German Culture and Civilization I	3	FLGR 3120 German Culture and Civilization II	3
	15		14

Junior

Fall	Hours	Spring	Hours
FOUN 3000 Diversity of Learners and Settings ⁶	3	FOUN 3110 Adolescent Development, Learning, Motivation and Assessment I ^{4,6}	3
RSED 3000/3003 Diversity and Exceptionality of Learners ⁶	3	CTSE 4080/4083 Curriculum and Teaching II: Foreign Language ^{4,6}	4
FLGR 3100 Introduction to German Literature	3	FLGR Electives (3000 or above) ⁸	9
CTSE 4070/4073 Curriculum and Teaching I: Foreign Language ^{4,6}	4		
FLGR Elective (3000 or above) ⁸	3		
	16		16

Senior

Fall	Hours	Spring	Hours
FOUN 3120 Adolescent Development, Learning, Motivation and Assessment II ^{4,6}	3	CTSE 4920 Internship ⁵	10
EDMD 3300 Utilization of Instructional Technology for Educators ⁶	2	CTSE 4200/4203 Managing Middle and High School Classrooms ^{4,7}	2
FLGR Electives (3000 or above) ⁸	6	UNIV 4AA0 University Graduation	0

Free Elective	1	
	12	12

Total Hours: 120

- ¹ FLGR 1010 and FLGR 1020 may also be required based on placement test score.
- ² PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050 /PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)
- ³ One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017, HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9)
- ⁴ Prerequisite: Admission to Teacher Education.
- ⁵ Prerequisite: Admission to Internship (application for internship is one year in advance).
- ⁶ Prerequisite for Admission to Internship.
- ⁷ Co-requisite with Internship.
- ⁸ FLGR Elective: See advisor for approved course listing.

Curriculum in Foreign Language Education/Spanish

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
Core History I		3 Core History II	3
Core Math		3 Approved Humanities Choice ²	3
Core Science I		4 Core Science II	4
FLSP 2010 Intermediate Spanish I ¹		4 FLSP 2020 Intermediate Spanish II ¹	4
		EDUC 1010 Orientation to Teacher Education ⁶	1
	17		18

Sophomore

Fall	Hours	Spring	Hours
Core Literature		3 Core Social Science ³	3
Core Fine Arts		3 COMM 1000 Public Speaking	3
Core Social Science ³		3 Elective	2
FLSP 3010 Spanish Phonetics		3 FLSP 3020 Spanish Syntax	3
FLSP 3030 Spanish Conversation		3 FLSP 3040 Spanish Composition	3
	15		14

Junior

Fall	Hours	Spring	Hours
FOUN 3000 Diversity of Learners and Settings ⁶		3 FOUN 3110 Adolescent Development, Learning, Motivation and Assessment I ^{4,6}	3
RSED 3000/3003 Diversity and Exceptionality of Learners ⁶		3 CTSE 4080/4083 Curriculum and Teaching II: Foreign Language ^{4,6}	4
FLSP 3100 Introduction to Hispanic Literature		3 FLSP 3210 Spanish-American Civilization I or 3220 Spanish-American Civilization II	3

CTSE 4070/4073 Curriculum and Teaching I: Foreign Language ^{4,6}	4 FLSP 3110 Spanish Civilization I or 3120 Spanish Civilization II	3
FLSP Elective (3000 or above) ⁸	3 FLSP Elective (3000 or above) ⁸	3
	16	16

Senior

Fall	Hours Spring	Hours
FOUN 3120 Adolescent Development, Learning, Motivation and Assessment II ^{4,6}	3 CTSE 4920 Internship ⁵	10
EDMD 3300 Utilization of Instructional Technology for Educators ⁶	2 CTSE 4200/4203 Managing Middle and High School Classrooms ^{4,7}	2
FLSP Electives (3000 or above) ⁸	6 UNIV 4AA0 University Graduation	0
Free Elective	1	
	12	12

Total Hours: 120

- ¹ FLSP 1010 and FLSP 1020 may also be required based on placement test score.
- ² PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050 /PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)
- ³ One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017,HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9)
- ⁴ Prerequisite: Admission to Teacher Education.
- ⁵ Prerequisite: Admission to Internship (application for internship is one year in advance).
- ⁶ Prerequisite for Admission to Internship.
- ⁷ Co-requisite with Internship.
- ⁸ FLSP Elective: See advisor for approved course listing.

Curriculum in General Science Education/Biology

Freshman

Fall	Hours Spring	Hours
ENGL 1100 English Composition I	3 ENGL 1120 English Composition II	3
MATH 1610 Calculus I or 1617 Honors Calculus I	4 GEOL 1100 Physical Geology	4
Core History ¹	3 Core History or Core Social Science	3
Core Fine Arts	3 Approved Humanities Choice ²	3
BIOL 1020 Principles of Biology	4 BIOL 1030 Organismal Biology	4
	EDUC 1010 Orientation to Teacher Education ⁶	1
	17	18

Sophomore

Fall	Hours Spring	Hours
CHEM 1030 Fundamentals Chemistry I	3 CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1 CHEM 1041 Fundamental Chemistry II Laboratory	1
Core Literature ¹	3 Core Literature or Core Humanities	3

Core Social Science ³	3 Core Social Science ³	3
BIOL 2500 Human Anatomy and Physiology I	4 PHYS 1150 Astronomy	4
BIOL 3030 Evolution and Systematics	3 BIOL 3060 Ecology	4
	17	18

Junior

Fall	Hours Spring	Hours
PHYS 1500 General Physics I	4 PHYS 1510 General Physics II	4
FOUN 3000 Diversity of Learners and Settings ⁶	3 BIOL 3100 Plant Biology	4
RSED 3000/3003 Diversity and Exceptionality of Learners ⁶	3 FOUN 3110 Adolescent Development, Learning, Motivation and Assessment I ^{4,6}	3
BIOL 3000 Genetics	4 CHEM 2070 Organic Chemistry I	3
CTSE 4000 Technology in Science Education ⁶	2 CHEM 2071 Organic Chemistry I Laboratory	1
	CTSE 4090 Curriculum and Teaching I: Science ^{4,6}	4
	16	19

Senior

Fall	Hours Spring	Hours
FOUN 3120 Adolescent Development, Learning, Motivation and Assessment II ^{4,6}	3 CTSE 4920 Internship ⁵	10
BIOL 4010 Invertebrate Biodiversity or 4020 Vertebrate Biodiversity	4 CTSE 4200/4203 Managing Middle and High School Classrooms ^{4,7}	2
BIOL 5240 Animal Physiology	4 UNIV 4AA0 University Graduation	0
CTSE 4100 Curriculum and Teaching II: Science ^{4,6}	4	
	15	12

Total Hours: 132

- ¹ Students must complete a history sequence or a literature sequence.
- ² PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040 /PHIL 1050/PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007 /HONR 1017(SLO3)
- ³ One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017,HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9)
- ⁴ Prerequisite: Admission to Teacher Education.
- ⁵ Prerequisite: Admission to Internship (application for internship is one year in advance).
- ⁶ Prerequisite for Admission to Internship.
- ⁷ Corequisite for Admission to Internship.

Curriculum in General Social Science Education/History

Freshman

Fall	Hours Spring	Hours
HIST 1010 World History I	3 HIST 1020 World History II	3
ENGL 1100 English Composition I	3 ENGL 1120 English Composition II	3

PSYC 2010 Introduction to Psychology	3	ECON 2020 Principles of Microeconomics	3
Core Science I		4 Core Science II	4
Core Fine Arts		3 Core Mathematics	3
		EDUC 1010 Orientation to Teacher Education ¹	1
	16		17
Sophomore			
Fall	Hours	Spring	Hours
Core Literature		3 Core Literature or Core Humanities	3
POLI 1020 Political Economy <i>or</i> ECON 2030 Principles of Macroeconomics		3 Approved Humanities Choice ³	3
EDMD 3300 Utilization of Instructional Technology for Educators ¹		2 GEOG 2010 Cultural Geography	3
Social Science Electives ²		6 Social Science Electives ⁴	6
Sociology Elective		3	
	17		15
Junior			
Fall	Hours	Spring	Hours
FOUN 3000 Diversity of Learners and Settings ¹		3 FOUN 3110 Adolescent Development, Learning, Motivation and Assessment I ^{1,6}	3
RSED 3000/3003 Diversity and Exceptionality of Learners ¹		3 FOUN 3120 Adolescent Development, Learning, Motivation and Assessment II ^{1,6}	3
Social Science Electives ⁵		12 CTSE 4210 Social Science Concepts and Methods ^{1,6}	3
		Social Science Electives ⁷	9
	18		18
Senior			
Fall	Hours	Spring	Hours
CTSE 4910 Practicum ⁶		1 CTSE 4920 Internship ¹⁰	10
CTSE 4050 Curriculum and Teaching I: Social Science ^{1,6}		4 CTSE 4200/4203 Managing Middle and High School Classrooms ^{6,9}	2
CTSE 4060 Curriculum and Teaching II: Social Science ^{1,6}		4 UNIV 4AA0 University Graduation	0
Social Science Electives ⁸		6	
	15		12

Total Hours: 128
¹ Prerequisite for Admission to Internship.² POLI 1090 and POLI 3120/POLI 3090³ PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050/PHIL 1060 /PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100(SLO3)⁴ HIST 2070/HIST 2080 and HIST 2110/HIST 2130⁵ HIST 2100/HIST 2120 and 9 hours of approved US History 3000-level or above⁶ Prerequisite: Admission to Teacher Education.

- 7 9 hours of approved HIST 3000-level or above
- 8 HIST 5060/HIST 5070 and 3 hours of approved HIST 3000-level or above
- 9 Co-requisite with Internship.
- 10 Prerequisite: Admission to Internship (application for internship is one year in advance).

Social Science Electives, Sociology Elective: See advisor for approved course listing.

Curriculum in Geography Education/Geography

Freshman

Fall	Hours	Spring	Hours
HIST 1010 World History I		3 HIST 1020 World History II	3
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
Core Fine Arts		3 Core Mathematics	3
Core Science I		4 Core Science II	4
PSYC 2010 Introduction to Psychology		3 ECON 2020 Principles of Microeconomics	3
		EDUC 1010 Orientation to Teacher Education ⁴	1
	16		17

Sophomore

Fall	Hours	Spring	Hours
ENGL 2200 World Literature before 1600		3 Core Literature or Core Humanities	3
EDMD 3300 Utilization of Instructional Technology for Educators		2 Approved Humanities Choice ¹	3
Geography Electives		6 Geography Electives	6
Social Science Electives		4 Social Science Electives	3
	15		15

Junior

Fall	Hours	Spring	Hours
FOUN 3000 Diversity of Learners and Settings ⁴		3 FOUN 3110 Adolescent Development, Learning, Motivation and Assessment I ^{2,4}	3
RSED 3000/3003 Diversity and Exceptionality of Learners ⁴		3 FOUN 3120 Adolescent Development, Learning, Motivation and Assessment II ^{2,4}	3
Geography Electives		12 CTSE 4210 Social Science Concepts and Methods ⁴	3
		Geography Electives	9
	18		18

Senior

Fall	Hours	Spring	Hours
CTSE 4910 Practicum ²		1 CTSE 4200/4203 Managing Middle and High School Classrooms ^{2,5}	2
CTSE 4050 Curriculum and Teaching I: Social Science ^{2,4}		4 CTSE 4920 Internship ³	10
CTSE 4060 Curriculum and Teaching II: Social Science ^{2,4}		4 UNIV 4AA0 University Graduation	0

Geography Electives	6	
	15	12

Total Hours: 126

- ¹ PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050 /PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100(SLO3)
- ² Prerequisite: Admission to Teacher Education.
- ³ Prerequisite: Admission to Teacher Education.
- ⁴ Prerequisite for Admission to Internship.
- ⁵ Co-requisite with Internship.

Geography, Social Science Electives: See advisor for approved course listing.

Curriculum in Mathematics Education/Mathematics

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
Core History I		3 Core History II	3
Core Fine Arts		3 Core Social Science ¹	3
Core Social Science ¹		3 EDUC 1010 Orientation to Teacher Education ²	1
MATH 1610 Calculus I or 1617 Honors Calculus I		4 MATH 1620 Calculus II	4
	16		14

Sophomore

Fall	Hours	Spring	Hours
Core Literature		3 COMM 1000 Public Speaking	3
MATH 2630 Calculus III		4 MATH 2650 Linear Differential Equations	3
Core Science I		4 MATH 3100 Introduction to Advanced Mathematics	3
Elective		3 MATH 2660 Topics in Linear Algebra	3
Approved Humanities Choice ³		3 Core Science II	4
	17		16

Junior

Fall	Hours	Spring	Hours
CTSE 5040 Technology and Applications in Secondary Mathematics Education ^{2,4}		4 CTMD 4010 Teaching Mathematics: Middle School ^{2,4}	4
FOUN 3000 Diversity of Learners and Settings ²		3 FOUN 3110 Adolescent Development, Learning, Motivation and Assessment I ^{2,4}	3
RSED 3000/3003 Diversity and Exceptionality of Learners ²		3 MATH 3010 History of Mathematics	3
MATH 5310 Introduction to Abstract Algebra I		3 STAT 3600 Probability and Statistics I	3
MATH 5380 Intermediate Euclidean Geometry I		3 MATH 5000 Level	3
	16		16

Senior

Fall	Hours	Spring	Hours
FOUN 3120 Adolescent Development, Learning, Motivation and Assessment II ^{2,4}	3	CTSE 4920 Internship ⁵	10
CTSE 4030 Curriculum and Teaching I: Mathematics ^{2,4}	4	CTSE 4200/4203 Managing Middle and High School Classrooms ^{4,6}	2
MATH 5200 Analysis I	3	UNIV 4AA0 University Graduation	0
Discrete Math Elective ⁷	3		
	13		12

Total Hours: 120

- ¹ One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017, HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9)
- ² Prerequisite for Admission to Internship.
- ³ PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050 /PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)
- ⁴ Prerequisite: Admission to Teacher Education.
- ⁵ Prerequisite: Admission to Internship (application for internship is one year in advance).
- ⁶ Co-requisite with Internship.
- ⁷ Select one of the following: MATH 5120/MATH 5140/MATH 5150/MATH 5180/ MATH 5300/MATH 5730/MATH 5750/MATH 5770

Curriculum in Music Education/Instrumental and Vocal**Freshman**

Fall	Hours	Spring	Hours
Core History	3	Core History or Core Social Science	3
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core Fine Arts	3	Core Mathematics	3
MUAP 1110 Performance I	1	MUAP 1210 Performance II	1
MUSE Ensemble ⁶	1	Muse Ensemble ⁷	1
MUSI 1000 Performance Attendance	0	MUSI 1000 Performance Attendance	0
MUSI 1020 Piano Skills I - Rudiments	1	MUSI 1030 Piano Skills II	1
MUSI 1310 Music Theory I	2	MUSI 1410 Music Theory II	2
MUSI 1320 Music Skills I	1	MUSI 1420 Music Skills II	1
EDUC 1010 Orientation to Teacher Education ⁵	1	MUSI 3090 String Instrument Skills	1
CTMU 1010 Introduction to Music Education ⁵	1	CTMU 1020 Music Education Lab I ⁵	1
	17		17

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Core Literature or Core Humanities	3
Core Science	4	Core Social Science ²	3

MUAP 2110 Performance III	1 MUAP 2210 Performance IV	1
MUSE Ensemble ⁷	1 MUSE Ensemble ⁷	1
MUSI 1000 Performance Attendance	0 MUSI 1000 Performance Attendance	0
MUSI 2040 Functional Piano I	1 MUSI 2050 Functional Piano II	1
MUSI 2310 Music Theory III	2 MUSI 2410 Music Theory IV	2
MUSI 2320 Music Skills III	1 MUSI 2420 Music Skills IV	1
MUSI 3040 Brass Instrument Skills	2 MUSI 3080 Percussion Skills	1
CTMU 2010 Music Education Lab II ⁵	1 CTMU 5110 Children's Music Learning or 5120 School and Community General Music Education ^{3,5,8,9}	4
	16	17
Junior		
Fall	Hours Spring	Hours
MUSE Ensemble ⁷	1 MUSI 1000 Performance Attendance	0
MUSI 1000 Performance Attendance	0 MUSE Small Ensemble ⁷	1
MUSI 3060 Woodwind Instrument Skills	2 Core Social Science ²	3
MUSI 3510 Music History I	3 MUSI 3520 Music History II	3
MUSI 3610 Choral Conducting I or 3630 Instrumental Conducting I	2 MUSI 3620 Choral Conducting II or 3640 Instrumental Conducting II	2
MUAP 3120 Performance V (applied)	1 MUAP 3220 Performance VI (applied)	1
CTMU 5130 School and Community Instrumental Music Education or 5140 School and Community Vocal Music Education ^{3,5,8,9}	4 MUSI 4000 Music Education Senior Recital Project	1
RSED 3000/3003 Diversity and Exceptionality of Learners ⁵	3 CTMU 5120 School and Community General Music Education or 5110 Children's Music Learning ^{3,5,8,9}	4
	FOUN 3000 Diversity of Learners and Settings ⁵	3
	16	18
Senior		
Fall	Hours Spring	Hours
Approved Humanities Choice ¹	3 CTMU 4920 Internship ^{4,8}	12
Core Science	4 UNIV 4AA0 University Graduation	0
CTMU 5140 School and Community Vocal Music Education or 5130 School and Community Instrumental Music Education ^{3,5,8,9}	4	
FOUN 3100 Child Development, Learning, Motivation and Assessment ³	6	
	17	12
Total Hours: 130		

- ¹ PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050/PHIL 1060 /PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)
- ² One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017,HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9).
- ³ Prerequisite: Admission to Teacher Education or Departmental Approval.
- ⁴ Prerequisite: Admission to Internship (application for internship is one year in advance).
- ⁵ Prerequisite for Admission to Internship.
- ⁶ Small ensembles include MUSE x130/ X160/X170/X200-X600.
- ⁷ Instrumental principals must take one vocal ensemble.
- ⁸ Piano proficiency required.
- ⁹ Students must complete all of the following: CTMU 5110, CTMU 5120, CTMU 5130, and CTMU 5140. Course rotation varies according to semester of admission to Teacher Education.

Curriculum in Physical Education/Teacher Education

Freshman

Fall	Hours	Spring	Hours
BIOL 1000/1020 Introduction to Biology	4	BIOL 1010/1030 A Survey of Life	4
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History ¹	3	Core Math	3
Core Social Science	3	Core History or Core Social Science	3
KINE 2250 Motor Development During the School Years	2	KINE 1100 Wellness	2
KINE 2251 Laboratory in Motor Development During the School Years	1	EDUC 1010 Orientation to Teacher Education ⁶	1
	16		16

Sophomore

Fall	Hours	Spring	Hours
Humanities	3	Core Literature or Core Humanities	3
Core Literature ¹	3	BIOL 2510 Human Anatomy and Physiology II	4
BIOL 2500 Human Anatomy and Physiology I	4	KINE 3680 Physiology of Exercise	4
KINE 3650 Motor Learning and Performance	4	Core Social Science	3
		KINE 3010 Instruction and Technology in Kinesiology	2
	14		16

Junior

Fall	Hours	Spring	Hours
FOUN 3000 Diversity of Learners and Settings ⁶	3	KINE 3230 Teaching Motor Skills	3
RSED 3000 Diversity and Exceptionality of Learners ⁶	3	FOUN 3100 Child Development, Learning, Motivation and Assessment ^{4,6}	6
KINE 3200 Skills and Concepts of Rhythmic Activities	3	KINE 3300 Instructional Strategies in Physical Education ⁴	3
Core Fine Arts	3	KINE 3620 Biomechanical Analysis of Human Movement	4

KINE 3260 Physical Education for Individuals with Disabilities	3	
	15	16
Senior		
Fall	Hours Spring	Hours
KINE 4200 Physical Education in Elementary Schools ^{4,6}	4 KINE 3280 Assessment in Physical Education ⁴	3
KINE 3210 Skills and Concepts of Sport	3 KINE 4920 Internship ⁵	10
KINE 4300 Physical Education in Secondary Schools ^{4,6}	4 UNIV 4AA0 University Graduation	0
KINE 4450 Physical Activity and Public Health	3	
	14	13
Total Hours: 120		

- ¹ Students must complete a history sequence or a literature sequence.
- ² PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/ PHIL 1050/PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/ HONR 1017(SLO3)
- ³ One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017, HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities (SLO9)
- ⁴ Prerequisite: Admission to Teacher Education.
- ⁵ Prerequisite: Admission to Internship (application for internship is one year in advance).
- ⁶ Prerequisite for Admission to Internship.
- ⁷ Co-requisite with Internship.

Curriculum in Physics Education/Physics

Freshman

Fall	Hours Spring	Hours
ENGL 1100 English Composition I	3 ENGL 1120 English Composition II	3
Core History I	3 Core History II	3
MATH 1610 Calculus I or 1617 Honors Calculus I	4 MATH 1620 Calculus II	4
Core Fine Arts	3 Approved Humanities Choice ¹	3
PHYS 1607 Honors Physics I	4 PHYS 1617 Honors Physics II	4
	EDUC 1010 Orientation to Teacher Education ⁵	1
	17	18

Sophomore

Fall	Hours Spring	Hours
CHEM 1030 Fundamentals Chemistry I	3 CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1 CHEM 1041 Fundamental Chemistry II Laboratory	1
Core Literature	3 Free Elective	3
Core Social Science ²	3 MATH 2650 Linear Differential Equations	3
MATH 2630 Calculus III	4 PHYS 2100 Intermediate Mechanics	3

PHYS 2200 Introductory Quantum Physics and Relativity	3	PHYS 2300 Physics Laboratory Skills	2
	17		15

Junior

Fall	Hours	Spring	Hours
COMM 1000 Public Speaking		3 Core Social Science	3
FOUN 3000 Diversity of Learners and Settings ⁵		3 FOUN 3110 Adolescent Development, Learning, Motivation and Assessment I ^{3,5}	3
RSED 3000/3003 Diversity and Exceptionality of Learners ⁵		3 Physics Elective (3000-6000 level)	6
PHYS 3100 Intermediate Electricity and Magnetism		3 CTSE 4090 Curriculum and Teaching I: Science ^{3,5}	4
PHYS 4100 Fundamentals of Quantum Mechanics	3		
	15		16

Senior

Fall	Hours	Spring	Hours
FOUN 3120 Adolescent Development, Learning, Motivation and Assessment II ^{3,5}		3 CTSE 4200/4203 Managing Middle and High School Classrooms ^{3,6}	2
CTSE 4000 Technology in Science Education ⁵		2 CTSE 4920 Internship ⁴	10
PHYS 4200 Fundamental Experiments in Physics		2 UNIV 4AA0 University Graduation	0
CTSE 4100 Curriculum and Teaching II: Science ^{3,5}	4		
Physics Elective (3000-5000 level)	6		
	17		12

Total Hours: 127

- ¹ PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040 /PHIL 1050/PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)
- ² One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017,HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9)
- ³ Prerequisite: Admission to Teacher Education.
- ⁴ Prerequisite: Admission to Internship (application for internship is one year in advance).
- ⁵ Prerequisite for Admission to Internship.
- ⁶ Co-requisite with Internship.

Physics Elective: See advisor for approved course listing.

Office Systems Management Minor

Select 15 hours from the following:

CTCT 1200	Keyboarding and Formatting	3
CTCT 2200/2203	Document Processing	3
CTCT 3000/3003	Leadership Skills for Personal and Organizational Development	3
CTCT 3200/3203	Records Management	2
CTCT 3240/3243	Information Processing I	3

CTCT 3250/3253	Information Processing II	3
CTCT 4200/4203	Managing Office Systems	3
CTCT 4940/4943	Directed Field Experience in Area of Specialization	3
CTCT 4970	Special Topics in Area of Specialization	1-3

Educational Foundations, Leadership and Technology

The Department of Educational Foundations, Leadership and Technology (http://www.education.auburn.edu/academic_departments/eflt) prepares exemplary educational practitioners and develops cooperative partnerships with university departments, schools, community agencies and business and industry to provide outstanding educators, trainers and leaders. This department ensures that students will participate in theoretical, applied and practitioner-based research enhancing the fields of adult education, higher education, educational leadership, educational media and educational psychology.

All the department's programs are at the graduate level; however, the department provides service courses for undergraduate teacher education majors in the areas of educational foundations and educational media.

More information about the Graduate program options (p. 504) is available on the department's Graduate bulletin page. The University schedule of courses (https://ssbprod.auburn.edu/pls/PROD/bwckschd.p_disp_dyn_sched) is available on the Auburn University Website.

Kinesiology

The Department of Kinesiology (http://www.education.auburn.edu/academic_departments/kine) prepares students in the following areas: exercise science; physical activity and health with an option in fitness, conditioning and performance; and physical education/teacher education. The mission of the Kinesiology programs at Auburn University is to promote the creation and application of knowledge about physical activity and performance, create and implement an invigorating learning environment for undergraduate and graduate students, and improve the health and wellness of society through research, outreach, and teaching. Students learn how to improve the health or performance of individuals using an intervention model and how to intervene in the lives of those who wish to become healthier or want to improve their athletic performance. Experiences run the gamut from trying to help an elderly person be well and fit to motivating the young child to be more physically active to assisting the elite athlete in optimizing sport performance.

Exercise Science

The undergraduate major in exercise science prepares students for graduate study in the exercise science sub-disciplines (biomechanics, exercise physiology, and motor behavior) and entry into professional programs such as medicine, physical therapy, and occupational therapy. Exercise science is a high demand major and requires an application process for students enrolled in pre-exercise science or desiring to transfer from another major. Due to limited enrollment, all students who meet minimum criteria may not be admitted. Click [here](#) (p. 192) for additional information.

Physical Activity and Health

(includes option in Fitness, Conditioning and Performance)

There are two degree options in this major: 1) physical activity and health, and 2) fitness, conditioning and performance. The undergraduate major in physical activity and health prepares students in applied exercise science and for management roles in a variety of health and fitness settings. Students attain the knowledge, skills and abilities to function as exercise professionals in cardiac and pulmonary rehabilitation and corporate and commercial fitness programs. The undergraduate option in fitness, conditioning and performance focuses on preparing students in the basic scientific foundations supporting fitness, health, and coaching practices. This option will prepare students for careers and certifications in personal training and in strength and conditioning.

Physical Education/Teacher Education

The undergraduate major in physical education/teacher education prepares highly qualified K-12 teachers with the capacity to create curriculum and instruction that help children achieve an active lifestyle which will continue in and through adulthood. This teacher education program is approved by the Alabama State Board of Education. Auburn University's College of Education is accredited by the National Council for Accreditation of Teacher Education (NCATE).

Physical Activity and Wellness (Non-degree Program)

The physical activity and wellness non-degree program is an 8 semester hour commitment and is available to all students across campus. Particularly attractive to those students who enjoy physical activity, the program combines study of the basic principles of wellness with participation in a broad range of physical activity categories. The specific course of study is shown below.

- KINE 1100: Wellness (2 credit hours)
- 3 PHED courses from 3 different categories, e.g., e.g. fitness, team sports, aquatics (6 hours)

While completion of this program does not appear on transcripts or diplomas, students may request a certificate upon completion.

The Department of Kinesiology offers the following undergraduate degree pro

Undergraduate Programs

- Exercise Science (p. 219)
- Fitness, Conditioning and Performance (p. 220)
- Physical Activity and Health (p. 221)
- Physical Education/Teacher Education (https://bulletin.auburn.edu/undergraduate/collegeofeducation/physicaleducation-teachereducation_major)

Curriculum in Exercise Science

Freshman

Fall	Hours	Spring	Hours
Select one of the following:		4 Select one of the following:	4
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory		BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	
BIOL 1027 Honors Biology & BIOL 1021 Principles of Biology Laboratory		BIOL 1037 Honors Organismal Biology & BIOL 1031 Organismal Biology Laboratory	
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
Core History ¹		3 MATH 1150 Pre-Calculus Algebra and Trigonometry	4
Core Social Science ³		3 Core History or Core Social Science	3
Core Fine Arts		3 PHED Elective	2
	16		16

Sophomore

Fall	Hours	Spring	Hours
Core Literature ¹		³ Approved Humanities Choice ²	3
MATH 1610 Calculus I		4 Core Literature or Core Humanities	3
KINE 1100 Wellness		2 BIOL 2510 Human Anatomy and Physiology II	4
Core Social Science		3 Elective	3
BIOL 2500 Human Anatomy and Physiology I		4 KINE 2250 Motor Development During the School Years	2
		KINE 2251 Laboratory in Motor Development During the School Years	1
	16		16

Junior

Fall	Hours	Spring	Hours
CHEM 1030 Fundamentals Chemistry I		3 KINE 3620 Biomechanical Analysis of Human Movement	4
CHEM 1031 Fundamental Chemistry I Laboratory		1 KINE 3650 Motor Learning and Performance	4
PHYS 1500 General Physics I		4 KINE 3680 Physiology of Exercise	4
Directed Electives		6 Directed Electives	4
		14	16

Senior

Fall	Hours	Spring	Hours
KINE 4760 Introduction to Exercise Science Research		3 KINE 4780 Exercise Science Research	3
KINE Electives ⁴		3 KINE Electives ⁴	3
PHED Elective		2 Directed Electives	6
KINE 4620 Exercise and Sport Psychology		3 UNIV 4AA0 University Graduation	0
Directed Electives		3	
		14	12

Total Hours: 120

- ¹ Students must complete a history sequence or a literature sequence.
- ² PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050/ PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)
- ³ One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017, HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710 taken as Humanities(SLO9)
- ⁴ Directed Electives and KINE Electives: See advisor for options.

Curriculum in Fitness, Conditioning and Performance

Freshman

Fall	Hours	Spring	Hours
Select one of the following: BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory BIOL 1027 Honors Biology & BIOL 1021 Principles of Biology Laboratory		4 Select one of the following: BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory BIOL 1037 Honors Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
Core Social Science ¹		3 MATH 1150 Pre-Calculus Algebra and Trigonometry	4
Core History ²		3 Core History or Core Social Science	3
KINE 1100 Wellness		2 PHED Elective	2
		15	16

Sophomore

Fall	Hours	Spring	Hours
Core Literature ²		3 Core Literature or Core Humanities	3
Core Fine Arts		3 Approved Humanities Choice ³	3
Core Social Science ¹		3 NTRI 2000/2010 Nutrition And Health	3
KINE 2250 Motor Development During the School Years		2 BIOL 2510 Human Anatomy and Physiology II	4
KINE 2251 Laboratory in Motor Development During the School Years		1 KINE 4620 Exercise and Sport Psychology	3
BIOL 2500 Human Anatomy and Physiology I	4		
	16		16

Junior

Fall	Hours	Spring	Hours
KINE 3620 Biomechanical Analysis of Human Movement		4 KINE 3650 Motor Learning and Performance	4
KINE 4450 Physical Activity and Public Health		3 KINE 4560/4563 Sport Technique and Movement Analysis	3
KINE 4400/4403 Applied Anatomy for the Allied Health Professional		3 KINE 4500 Individual and Group Fitness Instruction	3
Elective		2 KINE 5500 Exercise Technology I: Principles of Exercise Testing and Interpretation	4
KINE 3680 Physiology of Exercise	4		
	16		14

Senior

Fall	Hours	Spring	Hours
KINE 4600 Strength Development		3 KINE 4690/4693 Corrective Exercise Specialist Preparation	3
KINE 4640 Physical Conditioning and Speed		3 KINE 4630/4633 Strength and Conditioning Preparation	3
KINE 4880 Training and Conditioning Programming		3 KINE 4920 Internship	6
KINE 4860 Exercise Programming for Special Populations		3 UNIV 4AA0 University Graduation	0
KINE 5820 Sport Management	3		
	15		12

Total Hours: 120

¹ One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017, HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities (SLO9)

² Students must complete a history sequence or a literature sequence.

³ PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050/ PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/ HONR 1017(SLO3)

Curriculum in Physical Activity and Health

Freshman

Fall		Hours
Select one of the following:		
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory		
BIOL 1027 Honors Biology & BIOL 1021 Principles of Biology Laboratory		
ENGL 1100 English Composition I		
Core Social Science ¹		
Core History ²		
KINE 1100 Wellness		
	Hours	Spring
	4 Select one of the following:	4
	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	
	BIOL 1037 Honors Organismal Biology & BIOL 1031 Organismal Biology Laboratory	
	3 BIOL 1031 Organismal Biology Laboratory	0
	3 ENGL 1120 English Composition II	3
	3 MATH 1150 Pre-Calculus Algebra and Trigonometry	4
	2 Core History or Core Social Science	3
	PHED Elective	2
	15	16
Sophomore		
Fall	Hours	Spring
Core Literature ²	3 Core Literature or Core Humanities	3
Core Fine Arts	3 Approved Humanities Choice ³	3
Core Social Science ¹	3 KINE 3620 Biomechanical Analysis of Human Movement	4
KINE 2250 Motor Development During the School Years	2 Elective	2
KINE 2251 Laboratory in Motor Development During the School Years	1 KINE 3400 Health Promotion in the Workplace	3
BIOL 2500 Human Anatomy and Physiology I	4	
	16	15
Junior		
Fall	Hours	Spring
BIOL 2510 Human Anatomy and Physiology II	4 PHED Elective	2
Directed Electives ⁴	6 Directed Electives ⁴	6
KINE 3680 Physiology of Exercise	4 KINE 3650 Motor Learning and Performance	4
	KINE 5500 Exercise Technology I: Principles of Exercise Testing and Interpretation	4
	14	16
Senior		
Fall	Hours	Spring
KINE 4450 Physical Activity and Public Health	3 KINE 4920 Internship	12
KINE Elective ⁴	3 UNIV 4AA0 University Graduation	0
Directed Electives ⁴	3	
KINE 5550 Exercise Technology II: Applied Exercise Testing and Interpretation	4	

KINE 5400 Exercise Prescription for Normal and Special Populations	3	
	16	12
Total Hours: 120		

- ¹ One history or core social science course must be from ANTH 1000/ANTH 1007, GEOG 1010/GEOG 1017, HIST 1010/HIST 1017, HIST 1020/HIST 1027, PSYC 2010, SOCY 1000/SOCY 1007 OR UNIV 2720/UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities (SLO9)
- ² Students must complete a history sequence or a literature sequence.
- ³ PHIL 1010/PHIL 1017/PHIL 1020/PHIL 1027/PHIL 1030/PHIL 1037/PHIL 1040/PHIL 1050/ PHIL 1060/PHIL 1070/PHIL 1080/PHIL 1090/PHIL 1100/HONR 1007/HONR 1017(SLO3)
- ⁴ Directed Electives and KINE Electives: See advisor for approved course options.

Special Education, Rehabilitation, and Counseling

The Department of Special Education, Rehabilitation and Counseling (http://www.education.auburn.edu/academic_departments/serc) offers undergraduate majors that prepare professionals to serve children and adults with special needs and disabilities.

Special Education

Majors in special education prepare highly qualified teachers to serve children of all ages with intellectual disabilities, learning disabilities, autism, and behavior disorders. The Collaborative Teacher major leads to teacher certification in grades K-12; the Early Childhood Special Education major leads to teacher certification birth through age 8. These teacher education programs are approved by the Alabama State Board of Education. Auburn University's College of Education is accredited by the National Council for Accreditation of Teacher Education (NCATE).

Rehabilitation and Disability Studies

The Rehabilitation and Disability Studies program prepares students for jobs in the rehabilitation field such as vocational evaluation and work adjustment, mental health technicians, case managers, human service workers, and as supported employment specialists. Graduates can also use this major for entry into rehabilitation graduate programs in areas such as counselor training, physical therapy, and occupational therapy. The Council on Rehabilitation Education (CORE) accredits Auburn University's rehabilitation programs. The Rehabilitation Counseling program ranks No. 14, among public universities, in the Health Disciplines category of U.S. News & World Report's "Best Graduate Schools" survey of 2012.

The Auburn University schedule of courses (https://ssbprod.auburn.edu/pls/PROD/bwkschd.p_disp_dyn_sched) is available on the Auburn University Website. Information about graduate programs is available at the following links: [Rehabilitation and Special Education - MEd, MS, PhD](#) (p. 543) and [Counselor Education and Counseling Psychology- MEd, MS, PhD](#) (p. 498)

The Department of Special Education, Rehabilitation, and Counseling offers the undergraduate degree programs.

Undergraduate Majors

- Collaborative Teacher Education (p. 223)
- Early Childhood Special Education (p. 225)
- Rehabilitation and Disability Studies (p. 226)

Curriculum in Collaborative Teacher Education

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History I	3	Core History II	3

Core Social Science ²	3	Core Social Science	3
Core Fine Arts	3	Core Math	3
COMM 1000 Public Speaking	3	EDMD 3300 Utilization of Instructional Technology for Educators ⁵	2
EDUC 1010 Orientation to Teacher Education ⁵	1		
	16		14
Sophomore			
Fall	Hours	Spring	Hours
Core Literature	3	Core Science II	4
Core Science I	4	MATH 2860 Mathematics for Elementary Education II	3
Approved Humanities Choice ¹	3	Free Elective	6
MATH 2850 Mathematics for Elementary Education I	3	Science Elective with Lab	4
MATH 2870 Mathematics for Elementary Education III or Math Elective	3		
	16		17
Junior			
Fall	Hours	Spring	Hours
FOUN 3000 Diversity of Learners and Settings ⁵	3	FOUN 3100 Child Development, Learning, Motivation and Assessment ^{3,5}	6
RSED 3000 Diversity and Exceptionality of Learners ⁵	3	RSED 5150 Teaching Methods in Special Education ^{3,5}	3
RSED 3010 Introduction to Special Education	3	RSED 3110 Assessment in Special Education	3
RSED 5070 Mild Disabilities	3	RSED 5140 Curriculum in Severe Disabilities	3
RSED 5180 Instructional Classroom Management	3	RSED 4910 Practicum	1
CTRD 5700 Developmental Reading K-12	3		
	18		16
Senior			
Fall	Hours	Spring	Hours
RSED 5120 Curriculum in Elementary Special Education ^{3,5}	3	RSED 4920 Internship ⁴	9
RSED 5130 Curriculum in Secondary Special Education ^{3,5}	3	RSED 5160 Collaboration in Special Education ^{3,6}	3
RSED 4010 Behavior Management in Special Education	3	UNIV 4AA0 University Graduation	0
RSED 5170 Transition from School to Community	3		
RSED 5060 Severe Disabilities	3		
RSED 4910 Practicum	2		
	17		12
Total Hours: 126			

- ¹ PHIL 1010/ PHIL 1017/ PHIL 1020/ PHIL 1027/ PHIL 1030/ PHIL 1037/ PHIL 1040/ PHIL 1050/ PHIL 1060/ PHIL 1070/ PHIL 1080/ PHIL 1090/ PHIL 1100/HONR 1007/ HONR 1017(SLO3)
- ² One history or core social science course must be from ANTH 1000/ ANTH 1007, GEOG 1010/ GEOG 1017, HIST 1010/ HIST 1017, HIST 1020/ HIST 1027, PSYC 2010, SOCY 1000/ SOCY 1007 OR UNIV 2720/ UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9)
- ³ Prerequisite: Admission to Teacher Education.
- ⁴ Prerequisite: Admission to Internship (application for internship is one year in advance).
- ⁵ Prerequisite for Admission to Internship.
- ⁶ Co-requisite with Internship.

Curriculum in Early Childhood Special Education

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History I	3	Core History II	3
Core Social Science ²	3	Core Social Science ²	3
Core Fine Arts	3	Core Math	3
COMM 1000 Public Speaking	3	EDMD 3300 Utilization of Instructional Technology for Educators ⁵	2
EDUC 1010 Orientation to Teacher Education	1		
	16		14

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Free Elective	3
Core Science I	4	Core Science II	4
Approved Humanities Choice ¹	3	MATH 2860 Mathematics for Elementary Education II	3
MATH 2850 Mathematics for Elementary Education I	3	Science Elective with Lab	4
MATH 2870 Mathematics for Elementary Education III or Math Elective	3	Free Elective	3
	16		17

Junior

Fall	Hours	Spring	Hours
FOUN 3000 Diversity of Learners and Settings ⁵	3	FOUN 3100 Child Development, Learning, Motivation and Assessment ^{3,5}	6
RSED 3000 Diversity and Exceptionality of Learners ⁵	3	RSED 4910 Practicum	1
RSED 3010 Introduction to Special Education	3	RSED 5070 Mild Disabilities	3
RSED 5100 Infants and Toddlers with Disabilities	3	RSED 5110 Curriculum in Early Childhood Special Education ^{3,5}	3

RSED 5150 Teaching Methods in Special Education ^{3,5}	3	CTRD 5700 Developmental Reading K-12	3
	15		16
Senior			
Fall	Hours	Spring	Hours
RSED 4010 Behavior Management in Special Education	3	RSED 4920 Internship ⁴	9
RSED 4910 Practicum	2	RSED 5160 Collaboration in Special Education ^{3,6}	3
RSED 5140 Curriculum in Severe Disabilities	3	UNIV 4AA0 University Graduation	0
RSED 5060 Severe Disabilities	3		
RSED 5120 Curriculum in Elementary Special Education ^{3,5}	3		
RSED 5180 Instructional Classroom Management	3		
	17		12

Total Hours: 123

- ¹ PHIL 1010/ PHIL 1017/ PHIL 1020/ PHIL 1027/ PHIL 1030/ PHIL 1037/ PHIL 1040/ PHIL 1050/ PHIL 1060/ PHIL 1070/ PHIL 1080/ PHIL 1090/ PHIL 1100/ HONR 1007/ HONR 1017(SLO3)
- ² One history or core social science course must be from ANTH 1000/ ANTH 1007, GEOG 1010/ GEOG 1017, HIST 1010/ HIST 1017, HIST 1020/ HIST 1027, PSYC 2010, SOCY 1000/ SOCY 1007 OR UNIV 2720 / UNIV 2727 unless FLGC 1150 or UNIV 2710/HONR 2717 taken as Humanities(SLO9)
- ³ Prerequisite: Admission to Teacher Education.
- ⁴ Prerequisite: Admission to Internship (application for internship is one year in advance).
- ⁵ Prerequisite for Admission to Internship.
- ⁶ Co-requisite with Internship.

Curriculum in Rehabilitation and Disability Studies

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core Fine Arts	3	BIOL 1010/1030 A Survey of Life	4
BIOL 1000/1020 Introduction to Biology	4	Core Math	3
Core Social Science	3	PSYC 2010 Introduction to Psychology	3
Elective	3	COMM 1000 Public Speaking	3
	16		16

Sophomore

Fall	Hours	Spring	Hours
PHIL 1030 Ethics and the Health Sciences	3	Core Literature or Core Humanities	3
Core Literature ¹	3	Core History or Core Social Science	3
Core History ¹	3	BIOL 2510 Human Anatomy and Physiology II	4
BIOL 2500 Human Anatomy and Physiology I	4	STAT 2010 Statistics for Social and Behavior Sciences	4

Elective	3 PSYC 3570 Theories of Personality	3
	16	17
Junior		
Fall	Hours Spring	Hours
RSED 3020 Introduction to Rehabilitation	3 RSED 3120 Assessment in Rehabilitation	3
RSED 4120 Independent Living Services in Rehabilitation	3 RSED 4100 Professional Communication in Rehabilitation	3
RSED 4910 Practicum ²	1 RSED 4910 Practicum ²	2
RSED 5010 Medical Aspects of Disability	3 RSED 5210 Occupational Information	3
RSED 5200 Vocational Evaluation in Rehabilitation	3 RSED 5230 Rehabilitation Assistive Technology	3
Elective	3	
	16	14
Senior		
Fall	Hours Spring	Hours
RSED 4130 Ethical Practices in Rehabilitation	3 RSED 4920 Internship	9
RSED 4910 Practicum ²	1 Elective	3
RSED 5020 Psychosocial Aspects of Disability	3 UNIV 4AA0 University Graduation	0
RSED 5170 Transition from School to Community	3	
RSED 5220 Placement Services in Rehabilitation	3	
	13	12
Total Hours: 120		

¹ Students must complete a history sequence or a literature sequence.

² Students are required to complete four hours of practicum, which may be taken over 2-4 semesters.

Majors

Minors

Samuel Ginn College of Engineering

CHRIS ROBERTS, *Dean*

OLIVER D. KINGSLEY, JR., *Associate Dean*

NELS MADSEN, *Associate Dean*

RALPH H. ZEE, *Associate Dean*

ROBERT KARCHER, *Assistant Dean*

ENGINEERS ARE FACED with worldwide problems and expectations awesome in responsibility, yet exciting as professional challenges. These range from the extremes of interplanetary exploration through earth orbiting systems to the problems arising from our population explosion: energy, better productivity, housing, transportation and environmental issues.

As a renewed appreciation develops for the contributions of science and technology, engineering leaders are calling for engineers who are better equipped to tackle the specific, technical problems of the future. They also are calling for engineers who by breadth of education and understanding of other disciplines can convince others of the role of engineers not only in technical matters but in policy decisions to ensure the use of technology to benefit mankind.

Engineering education at Auburn provides in a four-year curriculum both the technical knowledge and the broad general education necessary to equip engineers for their problem-solving challenges. Centered on mathematics and the physical sciences, the curricula also stress the importance of social sciences, humanities and communication skills. Auburn's engineering programs enable individuals to develop their natural talents and provide knowledge, skills and understanding that will help them to find their places in society as well as in their vocations.

Admission

Freshmen eligibility is determined by the Office of Enrollment Services. However, since the requirements for engineering education necessitate high school preparatory work of high intellectual quality and of considerable breadth, the following program is recommended as minimum preparation: English, four units; mathematics (including algebra, geometry, trigonometry, and analytical geometry), four units; chemistry, one unit; history, literature, social science, two or three units. Physics and foreign languages are recommended but not required.

Transfers from other institutions must apply through the Office of Enrollment Services. The exact placement of these students can be determined only upon review of their transcripts by the Samuel Ginn College of Engineering. See Admission of Transfer Students (p. 92) for complete requirements.

The college allows credit for courses completed with satisfactory grades provided the courses correspond in time and content to courses offered at Auburn. Courses that are taught at the 3000-level or higher at Auburn are generally not transferable from junior colleges.

Many courses required by the Samuel Ginn College of Engineering are highly specialized in their content and potential transfer students need to select courses with care. Therefore, to ensure maximum transferability of credits, students are encouraged to contact the College as soon as possible about acceptable credits.

Transfers from on-campus must be approved by the Samuel Ginn College of Engineering and the admissions committee of the chosen curriculum, and meet the same academic requirements as off-campus transfer students. The requirements for a student to advance from the pre-engineering program into an engineering curriculum are subsequently described in the "Scholastic Requirements" section.

Programs

Pre-Engineering

The Pre-Engineering Program consists of a freshman program of studies to prepare students for curricula in the Samuel Ginn College of Engineering. It also provides academic and career counseling to assist students in determining the curriculum that best fulfills their personal and educational objectives.

Professional Programs

The following undergraduate engineering programs are accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>: Aerospace Engineering, Biosystems Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Industrial and Systems Engineering, Materials Engineering, Mechanical Engineering, Polymer and Fiber Engineering, Software Engineering, and Wireless Engineering.

The undergraduate Computer Science program is accredited by the Computing Accreditation Commission of ABET, <http://www.abet.org>.

These curricula are designed to meet the educational requirements of the engineering professions. The program in the fundamental sciences of mathematics, chemistry and physics is followed by a study of basic engineering sciences. Specialized or departmental courses are taken in the third and fourth years. Flexibility is provided in all degree programs through electives so that the individual may emphasize areas of personal interest.

An ecological engineering option and a forest engineering option are available under the biosystems engineering program. The forest engineering option is offered jointly by the Department of Biosystems Engineering and the School of Forestry and Wildlife Sciences. The environmental science curriculum is offered jointly by the College of Agriculture, the College of Engineering, and the College of Sciences and Mathematics.

Graduate

The Samuel Ginn College of Engineering offers the MS and PhD degrees in aerospace, biosystems, chemical, civil, computer science and software engineering, electrical and computer, industrial and systems, materials and mechanical engineering and polymer and fiber engineering. The following professional degrees are offered as well: master of aerospace engineering, master of chemical engineering,

master of civil engineering, master of electrical and computer engineering, master of industrial and systems engineering, master of materials engineering, master of mechanical engineering, master of polymer and fiber engineering, and master of software engineering. The college also offers a dual-degree master of industrial and systems engineering and master of business administration.

Cooperative Education

The Cooperative Education Program is offered in all curricula of the Samuel Ginn College of Engineering. Refer to the program and write to the Director, Cooperative Education, Auburn, AL 36849 for a booklet which gives additional information.

Continuing Education

Business and Engineering Continuing Education extends the resources of the Samuel Ginn College of Engineering to the people, businesses and industries of the state. Programs in this service are technical assistance, short courses, conferences, workshops and seminars. For more information, contact: Director, Business and Engineering Continuing Education, 217 Ramsay Hall, Auburn, AL 36849.

Video-Based Off-Campus Courses

The college offers graduate-level courses for credit and non-credit to off-campus students through its Graduate Outreach Program. Graduate-level courses are recorded in the classroom on the Auburn campus and mailed to off-campus students on the same day. Alternatively, courses can be delivered via streaming video. Students enrolled in the program are required to do the same homework assignments and take the same exams as the on-campus students enrolled in the course. For information on admission to the program, fees, course offerings and other particulars, write to the Graduate Outreach Program, 202 Ramsay Hall, Auburn, AL 36849 or call (334) 844-5300.

Scholastic Requirements

Pre-Engineering students are transferred to the curriculum of their choice in the Samuel Ginn College of Engineering upon meeting the following requirements:

Complete all appropriate freshman courses;

Earn an overall grade-point average of 2.2 on all required and approved elective course work.

Recommendation by the Curriculum Admissions Committee. A student who has not met the above criteria after four resident semesters is dropped from the college. Junior standing will not be granted to any student in the Pre-Engineering Program.

Degree Requirements

To earn the bachelor's degree in the Samuel Ginn College of Engineering, students must complete the subjects in the curriculum, have a minimum grade-point average of 2.0 in all work attempted at Auburn University and have a cumulative grade-point average of 2.0 on courses passed in the major at Auburn. The major is defined as all course work shown in bold print on the relevant curriculum model. It is the student's responsibility to keep informed of course requirements and scheduling. Failure to do so may jeopardize graduation.

Military Science

All curricula in the Samuel Ginn College of Engineering permit the use of six hours of basic or advanced ROTC courses passed at Auburn University. For the options, see the specific curriculum. For programs that do not have sufficient electives, credit will be determined on an individual basis. ROTC courses cannot be substituted for any university core or ABET-required courses.

Majors

- Aerospace Engineering (p. 231)
- Biosystems Engineering (p. 234)
- Biosystems Engineering (Ecological Engineering option) (p. 236)
- Biosystems Engineering (Forest Engineering option) (p. 233)
- Chemical Engineering (p. 240)
- Civil Engineering (p. 242)
- Computer Science (p. 244)
- Industrial and Systems Engineering (p. 254)
- Materials Engineering (p. 256)
- Mechanical Engineering (p. 257)

- Polymer and Fiber Engineering (Fiber Option) (p. 261)
- Polymer and Fiber Engineering (Polymer Option) (p. 262)
- Software Engineering (p. 245)
- Electrical Engineering (p. 247)
- Electrical Engineering (Computer Engineering Option) (p. 248)
- Wireless Engineering (Hardware Option) (p. 249)
- Wireless Engineering (Software Option) (p. 251)

Minors

- Automotive Engineering and Manufacturing (p. 253)
- Business-Engineering-Technology (p. 253)
- Computer Science (p. 244)
- Information Technology (p. 246)
- Materials Engineering (p. 259)
- Materials Science (p. 259)
- Nuclear Power Generation Systems (p. 255)
- Tribology (p. 259)

Program

- Aerospace Engineering - MAE., MS, PhD (p. 480)
- Biosystems Engineering - MS, PhD (p. 488)
- Chemical Engineering - MChE, MS, PhD (p. 489)
- Civil Engineering - MCE, MS, PhD (p. 491)
- Computer Science and Software Engineering - MSwE, MS, PhD (p. 496)
- Electrical and Computer Engineering - MEE, MS, PhD (p. 505)
- Industrial and Systems Engineering - MISE, MISE/MBA, MS, PhD (p. 520)
- Materials Engineering - MMtIE, MS, PhD (p. 524)
- Mechanical Engineering - MS, MME, PhD (p. 525)
- Polymer and Fiber Engineering - MS, PhD (p. 534)

Department of Aerospace Engineering

Aerospace engineers are concerned with the application of scientific principles and engineering concepts and practices to design, build, test and operate aerospace systems. The curriculum is intended to provide students with a broad understanding of fundamental scientific and technological principles, and to develop the ability to use these principles in developing solutions to engineering problems.

The objectives of the aerospace engineering program are: (1) to help students develop written and oral communication skills and to acquire a knowledge of history, literature and society; (2) to provide students a solid foundation in and a sound working knowledge of basic engineering principles; (3) to help students obtain an understanding of the engineering principles and skills specifically needed in the aeronautical and astronautical disciplines; and (4) to assist and encourage each student to develop an enhanced ability to learn and think creatively.

Required courses cover aeronautical and astronautical subjects. Students may also choose to emphasize either aeronautical or astronautical systems. Technical electives allow concentration in such areas as aerodynamics, astronautics, flight dynamics and control, propulsion, structures, and structural dynamics. The design of aerospace components and systems is considered to be an integral part of the education of aerospace engineers. Hence, design is included throughout the curriculum, beginning with a sophomore course in aerospace fundamentals and culminating in the senior design course sequence. Students are required to apply their theoretical knowledge of aerodynamics, dynamics, structures and propulsion to solve open-ended problems and to produce portions of preliminary designs.

Major

- Aerospace Engineering (p. 231)

Curriculum in Aerospace Engineering

Freshman

Fall	Hours	Spring	Hours
CHEM 1030 Fundamentals Chemistry I	3	ENGL 1120 English Composition II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	PHYS 1600 Engineering Physics I	4
ENGL 1100 English Composition I	3	MATH 1620 Calculus II	4
MATH 1610 Calculus I	4	Core History or other Core Social Science ¹	3
Core History	3	ENGR 1110 Introduction to Engineering	2
ENGR 1100 Engineering Orientation	0		
COMP 1200 Introduction to Computing for Engineers and Scientists	2		
	16		16

Sophomore

Fall	Hours	Spring	Hours	Summer	Hours
PHYS 1610 Engineering Physics II	4	Core Literature or other Core Humanities ¹	3	ELEC 3810 Fundamentals of Electrical Engineering	3
Core Literature	3	MATH 2650 Linear Differential Equations	3	Core Fine Arts	3
Core Humanity ²	3	ENGR 2010 Thermodynamics	3	Core Social Science	3
MATH 2630 Calculus III	4	ENGR 2070 Mechanics of Materials	3		
ENGR 2050 Statics	3	AERO 2200 Aerospace Fundamentals	2		
	17		14		9

Junior

Fall	Hours	Spring	Hours
ENGR 2350 Dynamics	3	AERO 3120 Aerodynamics II	3
MATH 5630 Introduction to Numerical Analysis I	3	AERO 3220 Aerospace Systems	3
MATH 2660 Topics in Linear Algebra	3	AERO 3230 Flight Dynamics	4
AERO 3110 Aerodynamics I	3	AERO 3310 Orbital Mechanics	3
AERO 3130 Aerodynamics Laboratory	2	AERO 3610 Aerospace Structures I	2
	14		15

Senior

Fall	Hours	Spring	Hours
AERO 4140 Aerodynamics III	3	AERO 4630 Aerospace Structural Dynamics	4
AERO 4510 Aerospace Propulsion	4	AERO 4AA0 Program Assessment	0
AERO 4620 Aerospace Structures II	4	AERO 4720 Aerospace Design II	3
AERO 4710 Aerospace Design I	3	Aero/Astro Elective ³	3
Aero/Astro Elective ³	3	Core Social Science	3
		UNIV 4AA0 University Graduation	0
	17		13

Total Hours: 131

- ¹ Student must complete either a Literature sequence or a History sequence
- ² Student must select a core course that addresses SLO 3.
- ³ Aero/Astro Electives - see adviser for approved course listing.

Department of Biosystems Engineering

Biosystems Engineers ensure that we have the necessities of life: safe and plentiful food to eat, pure water to drink, clean fuel and energy sources, and a safe, healthy environment in which to live. Therefore, the mission of the Department of Biosystems Engineering at Auburn University is to develop and disseminate engineering knowledge to solve problems in biological systems, natural resources and the environment. It meets the resident instruction portion of that mission through the offering of a degree program which leads to a Bachelor of Biosystems Engineering. Options in Ecological Engineering and Forest Engineering are also available under the Biosystems Engineering degree program.

Biosystems Engineering

The Department of Biosystems Engineering offers the only accredited degree in Biosystems Engineering in Alabama. It is committed to preparing students for productive professional careers in the biosystems industries and related natural resource and environmental systems sectors. Specific program educational objectives of the Biosystems Engineering degree program are: 1) Graduates solve engineering problems such as those associated with the environment and natural resources, and the production, processing, storage, manufacture, utilization, and recycling of biological products; 2) Graduates develop solutions to problems that combine engineering and biological sciences; 3) Graduates develop environmentally and economically feasible and practical design solutions; and 4) Graduates expand the role of engineering in society, communicate effectively, practice in a professional and ethical manner, and provide leadership in the profession. The Biosystems Engineering program curriculum is coordinated by the Samuel Ginn College of Engineering. Students should apply for admission to the Samuel Ginn College of Engineering and complete the Pre-Biosystems Engineering program.

Ecological Engineering Option

The Department of Biosystems Engineering offers an option in Ecological Engineering as part of the Bachelor of Biosystems Engineering degree. This option prepares students to solve environmental problems by applying engineering knowledge to natural ecological and biological systems. Ecological engineering combines basic and applied science from engineering, ecology, economics, and natural sciences to design, construct, and manage sustainable ecosystems that have value to both humans and the natural environment. The ecological engineering option is coordinated by the Samuel Ginn College of Engineering. Students should apply for admission to the Samuel Ginn College of Engineering and complete the Ecological Engineering option portion of the Pre-Biosystems Engineering program.

Forest Engineering Option

The Department of Biosystems Engineering in conjunction with the Samuel Ginn College of Engineering and School of Forestry and Wildlife Sciences offers an option in Forest Engineering as part of the Bachelor of Biosystems Engineering degree. This option

prepares students for productive professional careers in the forest products industry and related natural resource and environmental systems sector.

The Forest Engineering option is coordinated by the Samuel Ginn College of Engineering and the School of Forestry and Wildlife Sciences, and is administered by the Department of Biosystems Engineering. Upon completion of a minor in forest resources can become registered foresters. Beginning students should apply to the Samuel Ginn College of Engineering and complete the Forest Engineering option portion of the Pre-Biosystems Engineering program. Students pursuing the Forest Engineering option must meet School of Forestry and Wildlife Sciences requirements for admission to the Forestry Summer Field Practicum.

Major

- Biosystems Engineering (p. 234)
- Biosystems Engineering (Ecological Engineering option) (p. 236)
- Biosystems Engineering (Forest Engineering option (p. 233))

Curriculum in Biosystem Engineering (Forest Engineering option)

Freshman

Fall	Hours	Spring	Hours
CHEM 1030 Fundamentals Chemistry I	3	ENGL 1120 English Composition II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	PHYS 1600 Engineering Physics I	4
ENGL 1100 English Composition I	3	MATH 1620 Calculus II	4
MATH 1610 Calculus I	4	HIST 1220 Technology And Civilization II	3
HIST 1210 Technology and Civilization I	3	ENGR 1110 Introduction to Engineering	2
ENGR 1100 Engineering Orientation	0		
COMP 1200 Introduction to Computing for Engineers and Scientists	2		
	16		16

Sophomore

Fall	Hours	Spring	Hours	Summer	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	Fine Arts Core	3	FOEN 3000 Introduction to Forestry Operations	2
ENGR 2010 Thermodynamics	3	ENGR 2350 Dynamics	3	FOEN 3040 Forest Surveying	3
ENGR 2050 Statics	3	ENGR 2070 Mechanics of Materials	3	FORY 3020 Forest Biology	2
MATH 2630 Calculus III	4	MATH 2650 Linear Differential Equations	3	FORY 3050 Field Mensuration	3
BSEN 2210 Engineering Methods for Biological Systems	2	STAT 3010 Statistics for Engineers and Scientists	3	FORY 3060 Introduction to Forest Management Strategies	2
	16		15		12

Junior

Fall	Hours	Spring	Hours
ENGL 2200 World Literature before 1600	3	ECON 2020 Principles of Microeconomics	3
FORY 3100 Dendrology <i>or</i> FOPR 3390 Introduction to Wood Science and Forest Products (F), (P)	3	ENGL 2210 World Literature after 1600	3
FORY 3180 Forest Measurements I	3	Select one of the following Series:	4-6
BSEN 3210 Mechanical Power for Biosystems	3	SERIES A	
BSEN 3310 Hydraulic Transport in Biological Systems	4	CIVL 3310 Geotechnical Engineering I (F)	
		SERIES B	
		BSEN 3610 Instrumentation and Controls for Biological Systems (P)	
		BSEN 2240 Biological and Bioenvironmental Heat and Mass Transfer (P)	
		BSEN 3230 Natural Resource Conservation Engineering	3
	16		13-15

Senior

Fall	Hours	Spring	Hours
FORY 5230 Silviculture <i>or</i> FOEN 5230 Engineered Wood Structure Design (F), (P)	3-4	PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3
BSEN 5560 Site Design for Biosystems	3	Social Science Core	3
BSEN 5220 Geospatial Technologies in Biosystems	3	BSEN 4310 Engineering Design for Biosystems	3
BSEN 4300 Professional Practice in Biosystems Engineering	2	Forest Engineering Elective	3
FOEN 5710 Timber Harvesting Analysis Methods	3	UNIV 4AA0 University Graduation	0
	14-15		12

Total Hours: 130-133

Forest Engineering Elective: see adviser for approved course listing.

(F) denotes courses for Forest Emphasis.

(P) denotes courses for Products Emphasis.

Curriculum in Biosystems Engineering

Freshman

Fall	Hours	Spring	Hours		
CHEM 1030 Fundamentals Chemistry I	3	ENGL 1120 English Composition II	3		
CHEM 1031 Fundamental Chemistry I Laboratory	1	PHYS 1600 Engineering Physics I	4		
ENGL 1100 English Composition I	3	MATH 1620 Calculus II	4		
MATH 1610 Calculus I	4	HIST 1220 Technology And Civilization II	3		
HIST 1210 Technology and Civilization I	3	ENGR 1110 Introduction to Engineering	2		
ENGR 1100 Engineering Orientation	0				
COMP 1200 Introduction to Computing for Engineers and Scientists	2				
	16		16		
Sophomore					
Fall	Hours	Spring	Hours	Summer	Hours
BIOL 1020 Principles of Biology	4	BIOL 1030 Organismal Biology	4	ECON 2020 Principles of Microeconomics	3
ENGR 2050 Statics	3	ENGR 2350 Dynamics	3	CHEM 1040 Fundamental Chemistry II	3
ENGR 2010 Thermodynamics	3	ENGR 2070 Mechanics of Materials	3	STAT 3010 Statistics for Engineers and Scientists	3
MATH 2630 Calculus III	4	MATH 2650 Linear Differential Equations	3	PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3
BSEN 2210 Engineering Methods for Biological Systems	2	BSEN 2240 Biological and Bioenvironmental Heat and Mass Transfer	3		
	16		16		12
Junior					
Fall	Hours	Spring	Hours		
AGRN 2040 Basic Soil Science	4	ENGL 2200 World Literature before 1600	3		
BIOL 3200 General Microbiology	4	Fine Arts Core	3		
BSEN 3210 Mechanical Power for Biosystems	3	BSEN 3230 Natural Resource Conservation Engineering	3		
BSEN 3310 Hydraulic Transport in Biological Systems	4	BSEN 3240 Process Engineering in Biosystems	3		
		BSEN 3610 Instrumentation and Controls for Biological Systems	3		
	15		15		
Senior					
Fall	Hours	Spring	Hours		
ENGL 2210 World Literature after 1600	3	Social Science Core	3		

BSEN 4210 Irrigation System Design	3	BSEN 5230 Waste Management and Utilization for Biosystems	3
BSEN 4300 Professional Practice in Biosystems Engineering	2	BSEN 4310 Engineering Design for Biosystems	3
BSEN 5220 Geospatial Technologies in Biosystems	3	Biosystems Engr Elective	3
Biosystems Engr Elective	3	UNIV 4AA0 University Graduation	0
	14		12

Total Hours: 132

Biosystems Electives: see adviser for approved course listing.

Curriculum in Biosystems Engineering (Ecological Engineering option)

Freshman

Fall	Hours	Spring	Hours
CHEM 1030 Fundamentals Chemistry I	3	ENGL 1120 English Composition II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	PHYS 1600 Engineering Physics I	4
ENGL 1100 English Composition I	3	MATH 1620 Calculus II	4
MATH 1610 Calculus I	4	HIST 1220 Technology And Civilization II	3
HIST 1210 Technology and Civilization I	3	ENGR 1110 Introduction to Engineering	2
ENGR 1100 Engineering Orientation	0		
COMP 1200 Introduction to Computing for Engineers and Scientists	2		
	16		16

Sophomore

Fall	Hours	Spring	Hours	Summer	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	Fine Arts Core	3	ECON 2020 Principles of Microeconomics	3
ENGR 2050 Statics	3	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4	CHEM 1040 Fundamental Chemistry II	3
ENGR 2010 Thermodynamics	3	ENGR 2070 Mechanics of Materials	3	STAT 3010 Statistics for Engineers and Scientists	3
MATH 2630 Calculus III	4	MATH 2650 Linear Differential Equations	3	PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3

BSEN 2210 Engineering Methods for Biological Systems	2 BSEN 2240 Biological and Bioenvironmental Heat and Mass Transfer	3	
	16	16	12

Junior

Fall	Hours	Spring	Hours
AGRN 2040 Basic Soil Science	4	ENGL 2200 World Literature before 1600	3
BIOL 3200 General Microbiology	4	Social Science Core	3
CIVL 3230 Environmental Engineering	4	Ecology Elective	3
BSEN 3310 Hydraulic Transport in Biological Systems	4	BSEN 3230 Natural Resource Conservation Engineering	3
		BSEN 3610 Instrumentation and Controls for Biological Systems	3
	16		15

Senior

Fall	Hours	Spring	Hours
BSEN 5510 Ecological Engineering	3	ENGL 2210 World Literature after 1600	3
BSEN 5560 Site Design for Biosystems	3	BSEN 5520 Watershed Modeling	3
BSEN 5220 Geospatial Technologies in Biosystems	3	BSEN 5230 Waste Management and Utilization for Biosystems	3
BSEN 4300 Professional Practice in Biosystems Engineering	2	BSEN 4310 Engineering Design for Biosystems	3
Ecological Engineering Elective	3	UNIV 4AA0 University Graduation	0
	14		12

Total Hours: 133

Biosystems Electives: see adviser for approved course listing.

Chemical Engineering

Chemical engineers contribute to society through the useful application of knowledge and understanding of chemistry, physics, biology, and mathematics. Chemical engineers traditionally have participated in many decisions crucial to the preservation and improvement of society, including energy, fuel, commodity chemical and food production, resource management, and the design of necessary pollution control measures. Emerging new areas such as biotechnology, space technology, nanofabrication technology, semiconductor devices and modern construction materials also utilize the unique capabilities of the chemical engineer. Many technologies to improve public health depend significantly on chemical engineering such as biomaterials, biomedical devices, medical diagnostics, the chemical design and synthesis of drugs, the genetic engineering of therapeutic materials, drug delivery systems and medical imaging technology. Finally, chemical engineering plays an essential role in important environmental technologies such as atmospheric chemistry, product life cycle analysis, bioremediation, environmental risk and impact analysis, environmental friendly manufacturing technology and products, separation and conversion technologies for waste reduction and the cleanup of contaminated sites.

The instructional mission of the department is to provide its chemical engineering graduates with the tools, skills and competencies necessary to understand and apply today's technologies and, through life-long learning, successfully develop and employ tomorrow's technologies.

Specific program educational objectives of the Chemical Engineering program are:

1. Our graduates apply their technical proficiency for the professional practice of chemical engineering or any other career path they choose.
 - A. They successfully utilize practical engineering skills and have productive, gainful, and ethical careers in chemical and related industries and organizations.
 - B. They successfully pursue advanced technical and professional degrees.
 - C. They successfully transition into other professional areas, such as medicine, law, business or management.
2. Our graduates contribute to the professional practice of their chosen field through effective communication, leadership, teamwork, and service, while maintaining high ethical and professional standards.
3. Our graduates apply high standards in the performance of their professional work including global and societal issues such as health, safety, and the protection of the environment.
4. Our graduates demonstrate continued life-long learning through professional activities and training, the pursuit of higher educational degrees, and individual professional improvement.

Because of their broad training and education, chemical engineers contribute to society in many functions, such as pure research, development, environmental protection, process design, plant operation and manufacturing, marketing, sales, and corporate or government administration.

The program is specially designed to assure all students have demonstrated capabilities in the core chemical engineering topics including material and energy balances, thermodynamics, chemical equilibria, heat, mass and momentum transfer, chemical reaction engineering, continuous and stagewise separation operations, process dynamics, statistics and control. The design experience is interwoven throughout the curriculum from elementary design principles in material and energy balances to the capstone senior process design and process control sequence employing advanced computer process and control simulators and experimental control systems.

The curriculum is specifically designed to enable graduates to model and design chemical and physical processes, design and conduct experiments, analyze and interpret chemical engineering data, and to determine capital and operating costs for chemical and physical processes. The curriculum prepares graduates to understand the need for professional integrity and ethical decision making in the practice of chemical engineering as well as providing an understanding of contemporary issues including business practices, environmental, health, and safety and other public interests. Students are also prepared for graduate study in chemical engineering, medicine, business and law.

Because of the breadth of chemical engineering opportunities, the department offers a number of specially designed program specializations that provide unique training and course selection to those students who wish to concentrate in a particular area or technology. The current program specializations are biochemical engineering, biomedical engineering, computer-aided chemical engineering, environmental chemical engineering, pre-medicine specialization and pulp, paper and bio-resource engineering.

Biochemical Engineering Specialization

Chemical engineers trained in biochemical engineering and biotechnology are the key to successful commercialization of new biologically based processes ranging from high value pharmaceuticals to new food processes. This program specialization provides a strong biology and chemistry fundamental background for graduate work in biochemical engineering and a plan of study to meet these objectives.

Students in this specialization take BCHE 5180, CHEN 5800, and Biochemical Engineering Technical Elective (9 hours). These courses replace Technical Elective I-IV and the Advanced Chemistry Elective.

Biomedical Engineering Specialization

This specialization provides the necessary preparation for students wanting to do graduate work in biomedical engineering or work in a career with an emphasis of medical applications of chemical engineering.

Students in this specialization take:

PHIL 1030	Ethics and the Health Sciences	3
CHEM 2081	Organic Chemistry II Laboratory	1
BCHE 5180	Biochemistry I	3

CHEN 5810	Biomedical Engineering	3
Biomedical Engineering Technical Elective		8

These courses replace Technical Elective I-IV, the Advanced Chemistry Elective and PHIL 1040.

Computer-Aided Chemical Engineering Specialization

Chemical engineers with expertise in the application of advanced computer-aided tools in areas like process systems engineering, process control, and advanced process technology are highly sought after by all process industries. The program specialization provides appropriate courses for an individual with interests in advanced use of computers for solving chemical and biological engineering problems.

Students in this specialization take BCHE 5180 and a Computer-Aided Chemical Engineering Technical Elective (12 hours). These courses replace Technical Elective I-IV and the Advanced Chemistry Elective.

Environmental Chemical Engineering Specialization

The environmental specialization in chemical engineering prepares students for careers in the expanding environmental arena. Students specializing in this area learn about the chemical processes and reactions that affect the environment, pollution prevention, the latest standards for air, water and land quality, as well as, hazardous materials management. This specialization prepares students for environmental positions in a broad range of manufacturing and service industries all of which must comply with increasingly complex environmental standards, and in various state and federal agencies.

Students in this specialization take BCHE 5180 and Environmental Chemical Engineering Technical Electives (12 hours). These courses replace Technical Elective I-IV and the Advanced Chemistry Elective.

Pre-Medicine Specialization

This specialization provides the necessary preparation for students wanting to go to medical school. A Pre-Med series of courses, when completed, provides a chemical engineering degree while simultaneously meeting medical school requirements.

Students in this specialization take:

PHIL 1030	Ethics and the Health Sciences	3
CHEM 2081	Organic Chemistry II Laboratory	1
BCHE 5180	Biochemistry I	3
CHEN 5810	Biomedical Engineering	3
BIOL 1030 & BIOL 1031	Organismal Biology and Organismal Biology Laboratory	4
Pre-Medicine Technical Elective		4

These courses replace Technical Elective I-IV, PHIL 1040 and the Advanced Chemistry Elective. Students in this program specialization who are interested in medical school must also work with the director for Pre-Health Professions in the College of Science and Mathematics.

Pulp, Paper and Bio-Resource Engineering Specialization

in being capable of sustainable development with a renewable raw material base, recyclable products, and processing technology able to achieve energy self-sufficiency and environmental compatibility. This specialization prepares students for a broad range of career paths in process engineering, product development, bio-technology and sustainable engineering.

Students in this specialization take:

This specialization prepares students for challenging and rewarding careers in the pulp, paper and bio-resource industries. These industries are unique

CHEM 2081	Organic Chemistry II Laboratory	1
BCHE 5180	Biochemistry I	3
CHEN 3090	Pulp and Paper Technology	3

CHEM 4100	Pulp and Paper Processing Laboratory	2
CHEM 5110	Pulp and Paper Engineering	3

These courses replace Technical Elective I-IV and the Advanced Chemistry Elective.

Major

- Chemical Engineering (p. 240)

Curriculum in Chemical Engineering

Freshman

Fall	Hours	Spring	Hours
CHEM 1110 General Chemistry I	3	CHEM 1120 General Chemistry for Scientists and Engineers II	3
CHEM 1111 General Chemistry I Laboratory	1	CHEM 1121 General Chemistry II Laboratory	1
ENGL 1100 English Composition I	3	COMP 1200 Introduction to Computing for Engineers and Scientists	2
ENGR 1110 Introduction to Engineering	2	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	ENGR 1100 Engineering Orientation	0
Core History	3	MATH 1620 Calculus II	4
		PHYS 1600 Engineering Physics I	4
	16		17

Sophomore

Fall	Hours	Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	CHEM 2070 Organic Chemistry I	3
CHEM 2100 Principles of Chemical Engineering	4	CHEM 2071 Organic Chemistry I Laboratory	1
MATH 2630 Calculus III	4	CHEM 2AA0 Chemical Engineering Progress Assessment I	0
PHYS 1610 Engineering Physics II	4	CHEM 2610 Transport I	3
		Core History or Core Literature ¹	3
		ENGR 2010 Thermodynamics	3
		MATH 2650 Linear Differential Equations	3
	16		16

Junior

Fall	Hours	Spring	Hours	Summer	Hours
CHEM 2080 Organic Chemistry II	3	CHEM 3AA0 Chemical Engineering Progress Assessment II	0	CHEM 4860 Chemical Engineering Laboratory II	2

CHEN 3370 Phase and Reaction Equilibria	3	CHEN 3650 Chemical Engineering Analysis	3	PHIL 1040 Business Ethics	3
CHEN 3600 Computer-Aided Chemical Engineering	3	CHEN 3660 Chemical Engineering Separations	3	CHEN Technical Elective 1	3
CHEN 3620 Transport II	3	CHEN 3700 Chemical Reaction Engineering	3	Core Social Science	3
Core Literature	3	CHEN 3820 Chemical Engineering Laboratory I	2		
		Core Social Science	3		
	15		14		11

Senior

Fall	Hours	Spring	Hours
CHEN 4170 Digital Process Control	3	CHEN 4470 Process Design Practice	3
CHEN 4450 Process Economics and Safety	3	CHEN Technical Elective 3 or ROTC	3
CHEN 4460 Process Simulation Synthesis and Optimization	2	CHEN Technical Elective 4 or ROTC	3
CHEN Technical Elective 2	3	Core Fine Arts	3
Advanced Chemistry Elective	3	Core Social Science or Core Humanities ²	3
		UNIV 4AA0 University Graduation	0
	14		15

Total Hours: 134

¹ Students must complete a sequence in either Literature or History.

² Must be Social Science if the Literature sequence was completed, Humanities if the History sequence was completed.

Electives, Technical Electives, Advanced Chemistry Elective: See adviser for approved course listing.

Civil Engineering

Civil engineers conceive, plan, design, construct, operate, and maintain the facilities and systems that serve the basic needs of society. Auburn University's Department of Civil Engineering strives to prepare students, through high quality programs, to practice civil engineering professionally in a competitive global environment. The department's objectives include preparing graduates to play an active role in the civil engineering profession by functioning as effective team members while developing leadership skills in the profession and in the community, communicating ideas and information effectively, and expanding their body of knowledge and experience as they make progress towards licensure as professional engineers. Graduates should be able to successfully engage in one or more of the following activities: planning and design of new civil infrastructure systems, or rehabilitation of existing systems; monitoring and analysis of the performance of existing infrastructure systems to assess their safety, efficiency, or remaining usefulness; management of natural resources and processes; management of construction or rehabilitation processes; and graduate or professional studies.

The first two years focus on basic principles, which are applied in the last two years in required and elective courses in major specialty areas including construction, geotechnical, transportation, hydraulics, structural, pavements, and environmental engineering. Engineering science and design are integrated throughout, with the design emphasis shifting from introduction of fundamental concepts, principles and tools in the early courses to increasingly realistic situations. The experience culminates in the capstone senior design project. Graduates are prepared for a variety of entry-level civil engineering positions.

Major

- Civil Engineering (p. 242)

Curriculum in Civil Engineering

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
PHYS 1600 Engineering Physics I	4	PHYS 1610 Engineering Physics II	4
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
HIST 1020 World History II	3	POLI 1090 American Government in Multicultural World	3
ENGR 1100 Engineering Orientation	0	ENGR 1110 Introduction to Engineering	2
COMP 1200 Introduction to Computing for Engineers and Scientists	2		
	16		16

Sophomore

Fall	Hours	Spring	Hours	Summer	Hours
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3	Core Literature II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	ENGR 2070 Mechanics of Materials	3	Core Social Science	3
Core Literature I ¹	3	ENGR 2200 Introduction To Thermodynamics, Fluids And Heat Transfer	3	STAT 3010 Statistics for Engineers and Scientists	3
ENGR 2050 Statics	3	ENGR 2350 Dynamics	3		
MATH 2630 Calculus III	4	MATH 2650 Linear Differential Equations	3		
CIVL 2010 Surveying	3				
	17		15		9

Junior

Fall	Hours	Spring	Hours
CIVL 3010 Civil Engineering Analysis	4	CIVL 3110 Hydraulics	4
CIVL 3310 Geotechnical Engineering I	4	CIVL 3230 Environmental Engineering	4
CIVL 3410 Construction Engineering	3	CIVL 3510 Transportation Engineering	4
CIVL 3610 Structural Analysis	4	CIVL 3820 Civil Engineering Materials	3
	15		15

Senior

Fall	Hours Spring	Hours
PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics (Core Ethics)	3 Core Fine Arts	3
Science Elective ²	4 Core Social Science	3
Specialty Elective ²	6 Specialty Elective ²	3
Technical Elective ²	3 Technical Elective ²	3
	Senior Design Project ²	3
	UNIV 4AA0 University Graduation	0
	16	15

Total Hours: 134

¹ Student must complete literature sequence.

² Science Elective, Specialty Elective, Technical Elective: see advisor for approved course listing.

Computer Science and Software Engineering

Computer Science

The computer science curriculum, which leads to the bachelor of science in computer science degree, provides an excellent preparation for students seeking careers as software professionals and in computing-related fields, as well for those planning to pursue graduate study. The curriculum builds on a strong foundation in science, mathematics, social sciences, humanities and computer science with advanced course work in theoretical computer science, human-computer interaction, and net-centric computing. Course work ensures that students receive hands-on exposure to a variety of computer systems, tools and techniques. Elective courses allow students to specialize in core areas of computer science such as networking, database systems, and artificial intelligence. In addition, students select a concentration of 9 semester credit hours outside computer science (e.g., business, mathematics, physics, etc.). This concentration enriches students' educational experience and adds breadth of knowledge by providing an opportunity to explore a second field of study to which computer science can be applied. The curriculum also emphasizes oral and written communication skills, the importance of ethical behavior, and the need for continual, lifelong learning.

Specific educational objectives of the Computer Science program are to: (1) Develop within graduates the level of technical proficiency needed for the professional practice of computer science; (2) Develop within graduates the ability to effectively communicate their ideas to other practicing professionals and the general public; (3) Instill within graduates an appreciation for and the ability to engage in life-long learning; (4) Instill within graduates an appreciation for and an understanding of the need to maintain high ethical standards both as professionals as well as individuals; (5) Prepare graduates to compete for positions in the job market and in graduate schools.

The Computer Science degree program is accredited by: Computing Accreditation Commission of ABET 111 Market Place, Suite 1050 Baltimore, MD 21202-4012 C telephone: 410-347-7700.

Software Engineering

The focus of the software engineering curriculum, which leads to the bachelor of software engineering, is on the analysis, design, verification, validation, construction, application, and maintenance of software systems. The degree program prepares students for professional careers and graduate study with a balance of computer science theory and practical application of software engineering methodology using modern software engineering environments and tools. The curriculum is based on a strong core of topics including software modeling and design, construction, process and quality assurance, intelligent and interactive systems, networks, operating systems, and computer architecture. The curriculum also enriches each student's general education with a range of courses from science, mathematics, the humanities and the social sciences. Through advanced elective courses, the curriculum allows students to specialize in core areas of computer science and software engineering. Engineering design theory and methodology, as they apply to software systems, form an integral part of the curriculum, beginning with the first course in computing and culminating with a comprehensive senior design project, which gives students the opportunity to work in one or more significant application domains. The

curriculum also emphasizes oral and written communication skills, the importance of ethical behavior, and the need for continual, life-long learning.

Specific educational objectives of the Software Engineering program are to: (1) Develop within graduates the level of technical proficiency needed for the professional practice of software engineering; (2) Develop within graduates the ability to effectively communicate their ideas to other practicing professionals and to the general public; (3) Instill within graduates an appreciation for and the ability to engage in lifelong learning; (4) Instill within graduates an appreciation for and an understanding of the need to maintain high ethical standards both as professionals as well as individuals; (5) Prepare graduates to compete for positions in the job market and in graduate schools.

The software engineering program is accredited by: The Engineering Accreditation Commission of ABET 11 Market Place, Suite 1050 Baltimore, MD 21202-4012 (telephone: 410-347-7700).

Majors

- Computer Science (p. 244)
- Software Engineering (p. 245)
- Wireless Engineering (Hardware Option) (p. 249)
- Wireless Engineering (Software Option) (p. 251)

Minor

- Computer Science (p. 244)
- Information Technology (p. 246)

Computer Science Minor

COMP 1210	Fundamentals of Computing I	3
COMP 2210	Fundamentals of Computing II	4
COMP 2710	Software Construction	3
COMP 3240	Discrete Structures	3
COMP 3270	Introduction to Algorithms	3
COMP 3700	Software Modeling and Design	3
Total Hours		19

Curriculum in Computer Science

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History	3	Core History or other Social Science ¹	3
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
ENGR 1110 Introduction to Engineering	2	Core Science Sequence II	4
Core Science Sequence I	4	COMP 1210 Fundamentals of Computing I	3
	16		17

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Core Literature or other Humanities ¹	3

Core Social Science	3	COMP 3240 Discrete Structures	3
COMM 1000 Public Speaking	3	ELEC 2200 Digital Logic Circuits	3
Science Elective	4	MATH 2660 Topics in Linear Algebra	3
COMP 2210 Fundamentals of Computing II	4	COMP 2710 Software Construction	3
	17		15

Junior

Fall	Hours	Spring	Hours
STAT 3600 Probability and Statistics I		3 PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3
COMP 3220 Principles of Programming Languages		3 Concentration	3
COMP 3270 Introduction to Algorithms		3 Core Social Science	3
COMP 3350 Computer Organization and Assembly Language Programming		3 COMP 3500 Introduction to Operating Systems	3
Core Fine Arts		3 COMP 3700 Software Modeling and Design	3
	15		15

Senior

Fall	Hours	Spring	Hours
Free Elective or ROTC		3 Concentration	3
Concentration		3 COMP 4730 Computer Ethics	1
COMP 4200 Formal Languages		3 COMP Elective	6
COMP 4320 Introduction to Computer Networks		3 Math Elective	3
COMP Elective		3 UNIV 4AA0 University Graduation	0
	15		13

Total Hours: 123

¹ Student must complete a sequence in either history or literature.

COMP Elective, Math/Science Elective: See adviser for approved course listing.

Curriculum in Software Engineering

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
Core History		3 Core History or other Social Science ¹	3
PHYS 1600 Engineering Physics I		4 PHYS 1610 Engineering Physics II	4
MATH 1610 Calculus I		4 MATH 1620 Calculus II	4
ENGR 1100 Engineering Orientation		0 COMP 1210 Fundamentals of Computing I	3
ENGR 1110 Introduction to Engineering		2	
	16		17

Sophomore

Fall	Hours	Spring	Hours
Core Social Science		3 Core Literature or other Humanities ¹	3

Core Literature	3	COMP 3240 Discrete Structures	3
Core Fine Arts	3	ELEC 2200 Digital Logic Circuits	3
MATH 2630 Calculus III	4	MATH 2660 Topics in Linear Algebra	3
COMP 2210 Fundamentals of Computing II	4	COMP 2710 Software Construction	3
	17		15

Junior

Fall	Hours	Spring	Hours
ENGR 2100 Fundamentals of Engineering Mechanics		3 PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3
MATH 2650 Linear Differential Equations		3 STAT 3600 Probability and Statistics I	3
COMP 3220 Principles of Programming Languages		3 Core Social Science	3
COMP 3270 Introduction to Algorithms		3 COMP 3500 Introduction to Operating Systems	3
COMP 3350 Computer Organization and Assembly Language Programming		3 COMP 3700 Software Modeling and Design	3
	15		15

Senior

Fall	Hours	Spring	Hours
COMP 4300 Computer Architecture		3 COMP 4710 Senior Design Project	3
COMP 4320 Introduction to Computer Networks		3 COMP 4730 Computer Ethics	1
COMP 5700 Software Process		3 COMP 5710 Software Quality Assurance	3
COMP Elective		6 COMP Elective	3
		Free Elective or ROTC	3
		UNIV 4AA0 University Graduation	0
	15		13

Total Hours: 123

¹ Student must complete a sequence in either history or literature.

COMP Electives: See adviser for approved course listing.

Information Technology Minor

15 semester hours in minor (minimum 9 hours at 3000-level or above)

Select three of the following: 9

COMP 3000	Object-Oriented Programming for Engineers and Scientists
COMP 4000	Systems Administration for Information Technology
COMP 4730	Computer Ethics
COMP 5000	Web Application Development
COMP 5010	Interactive Applications in Visual Basic
COMP 5020	Advanced Web Application Development
COMP 5030	Object-Oriented Technologies

Electives Courses: see advisor for approved course listing. 6

Total Hours 15

Electrical and Computer Engineering

The Electrical and Computer Engineering curricula produce well-educated graduates prepared to practice engineering at a professional level in an era of rapid and challenging technological development. The educational objectives of the Electrical Engineering curriculum include developing within our graduates a basic foundation in seven fundamental areas of electrical engineering (circuits and systems, electromagnetics, electronics, digital systems, communications and signal processing, control systems, and power engineering) to provide the technical proficiency needed for the professional practice of electrical engineering. The educational objectives of the Computer Engineering Option include developing within our graduates a basic foundation in both electrical engineering (circuits and systems, electronics, and digital systems) and computer science to provide the technical proficiency needed for the professional practice of computer engineering, including the design and application of computer components and systems. In addition, both curricula have as educational objectives to develop within our graduates the ability to communicate their ideas effectively to technical and non-technical audiences and work effectively in multidisciplinary terms, to prepare them to take their places in society as responsible citizens, and to provide them with the basis for, and instill within them an appreciation of and enthusiasm for, lifelong scientific inquiry, learning and creativity.

The goal of the professional portion of each curriculum is to emphasize basic areas of study while providing the flexibility to accommodate a diversity of interests and talents. To this end, each curriculum emphasizes engineering design, hands-on laboratory experience, knowledgeable use of digital computer systems, oral and written communication skills, the importance of business, economic, social and global forces on engineering, appreciation of the need to maintain the highest ethical standards, and the maintenance of professional competence through continued self-improvement after graduation.

Each curriculum builds upon a solid foundation in mathematics and science. In the Electrical Engineering curriculum, topics in the seven fundamental areas of electrical engineering are introduced early and are carefully coordinated to provide the principles necessary for the practice of electrical engineering. In the Computer Engineering Option, fundamental topics in both electrical engineering and computer science are introduced early and are carefully coordinated to provide the principles necessary for the design and application of computer components and systems. In each case, design experience is interwoven throughout the curriculum by introducing basic design concepts early, emphasizing design experiences in the laboratories, and culminating with a capstone design project in the senior year. The senior year elective structure provides students with the flexibility to pursue a range of career options.

Major

- Electrical Engineering (p. 247)
- Electrical Engineering (Computer Engineering Option) (p. 248)
- Wireless Engineering (Hardware Option) (p. 249)
- Wireless Engineering (Software Option) (p. 251)

Curriculum in Electrical Engineering

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
PHYS 1600 Engineering Physics I	4	PHYS 1610 Engineering Physics II	4
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
Core History ¹	3	Core History or Core Social Science ¹	3
ENGR 1100 Engineering Orientation	0	ENGR 1110 Introduction to Engineering	2
COMP 1200 Introduction to Computing for Engineers and Scientists	2		
	16		16

Sophomore

Fall	Hours	Spring	Hours
Core Social Science	3	CHEM 1030 Fundamentals Chemistry I	3

MATH 2630 Calculus III	4	CHEM 1031 Fundamental Chemistry I Laboratory	1
MATH 2650 Linear Differential Equations	3	MATH 2660 Topics in Linear Algebra	3
ELEC 2110 Electric Circuit Analysis	4	ELEC 2120 Linear Signals and Systems Analysis	3
ELEC 2200 Digital Logic Circuits	3	ELEC 2210 Digital Electronics	4
		ELEC 2220 Computer Systems	3
	17		17
Junior			
Fall	Hours	Spring	Hours
Core Literature ¹		3 Core Literature or Humanities ¹	3
ELEC 3030 RF Systems Lab		1 Core Fine Arts	3
ELEC 3310 Fundamentals of Applied Electromagnetics		3 ELEC 3040 Electrical System Design Lab	1
ELEC 3600 Electric Power Engineering		3 ELEC 3320 Electromagnetics for Wireless Communication	3
ELEC 3700 Analog Electronics		3 ELEC 3400 Communication Systems	3
ELEC 3800 Random Signals and Systems		3 ELEC 3500 Control Systems	3
	16		16
Senior			
Fall	Hours	Spring	Hours
Core Social Science		3 PHIL 1040 Business Ethics	3
ENGR 2100 Fundamentals of Engineering Mechanics		3 ENGR 2200 Introduction To Thermodynamics, Fluids And Heat Transfer	3
INSY 3600 Engineering Economy ²		3 ELEC 4000 Senior Design Projects	3
ELEC Elective		3 ELEC Elective	3
Math/Science Elective		3 Elective ²	3
		UNIV 4AA0 University Graduation	0
	15		15
Total Hours: 128			

¹ Student must complete a sequence in either literature or history.

² For students completing the ROTC program, the first ROTC course may be used as the 3-hour free elective, and the second ROTC course may be substituted for ENGR 2200.

ELEC Elective, Math/Science Elective: see adviser for approved course listing.

Curriculum in Electrical Engineering (Computer Engineering Option)

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
PHYS 1600 Engineering Physics I		4 PHYS 1610 Engineering Physics II	4
MATH 1610 Calculus I		4 MATH 1620 Calculus II	4
Core History ¹		3 Core History or Core Social Science ¹	3
ENGR 1110 Introduction to Engineering		2 COMP 1210 Fundamentals of Computing I	3

ENGR 1100 Engineering Orientation	0	
	16	17
Sophomore		
Fall	Hours Spring	Hours
MATH 2630 Calculus III	4 MATH 2660 Topics in Linear Algebra	3
MATH 2650 Linear Differential Equations	3 COMP 2710 Software Construction	3
ELEC 2110 Electric Circuit Analysis	4 ELEC 2120 Linear Signals and Systems Analysis	3
COMP 2210 Fundamentals of Computing II	4 ELEC 2210 Digital Electronics	4
ELEC 2200 Digital Logic Circuits	3 ELEC 2220 Computer Systems	3
	18	16
Junior		
Fall	Hours Spring	Hours
Core Literature ¹	3 CHEM 1030 Fundamentals Chemistry I	3
ELEC 3050 Embedded System Design Lab	1 CHEM 1031 Fundamental Chemistry I Laboratory	1
COMP 3240 Discrete Structures	3 Core Literature or Core Humanities ¹	3
COMP 3500 Introduction to Operating Systems	3 Core Fine Arts	3
ELEC 3700 Analog Electronics	3 COMP 3270 Introduction to Algorithms	3
ELEC 3800 Random Signals and Systems	3 ELEC 4200 Digital System Design	3
	16	16
Senior		
Fall	Hours Spring	Hours
Core Social Science	3 Core Social Science	3
INSY 3600 Engineering Economy ²	3 PHIL 1040 Business Ethics	3
ELEC 5200 Computer Architecture and Design	3 ELEC 4000 Senior Design Projects	3
ELEC 5220 Information Networks and Technology	3 ECE Elective	5
Elective ²	3 UNIV 4AA0 University Graduation	0
	15	14

Total Hours: 128

¹ Student must complete a sequence in either literature or history

² For students completing the ROTC program, the first ROTC course may be used as the 3-hour free elective, and the second ROTC course may be substituted for INSY 3600.

ECE elective - see adviser for approved course listing.

Joint Wireless Engineering-Hardware Option

Freshman

Fall	Hours Spring	Hours
Core History	3 Core History or Core Social Science ¹	3
ENGL 1100 English Composition I	3 ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4 MATH 1620 Calculus II	4

COMP 1200 Introduction to Computing for Engineers and Scientists	2	ENGR 1110 Introduction to Engineering	2
ENGR 1100 Engineering Orientation	0	PHYS 1610 Engineering Physics II	4
PHYS 1600 Engineering Physics I	4		
	16		16

Sophomore

Fall	Hours	Spring	Hours
Core Social Science	3	CHEM 1030 Fundamentals Chemistry I	3
MATH 2630 Calculus III	4	CHEM 1031 Fundamental Chemistry I Laboratory	1
MATH 2650 Linear Differential Equations	3	MATH 2660 Topics in Linear Algebra	3
ELEC 2110 Electric Circuit Analysis	4	ELEC 2120 Linear Signals and Systems Analysis	3
ELEC 2200 Digital Logic Circuits	3	ELEC 2210 Digital Electronics	4
		ELEC 2220 Computer Systems	3
	17		17

Junior

Fall	Hours	Spring	Hours
Core Literature	3	Core Literature or Humanities ¹	3
COMP 3000 Object-Oriented Programming for Engineers and Scientists	3	Core Fine Arts	3
ELEC 3030 RF Systems Lab	1	INSY 3600 Engineering Economy	3
ELEC 3310 Fundamentals of Applied Electromagnetics	3	ELEC 3320 Electromagnetics for Wireless Communication	3
ELEC 3700 Analog Electronics	3	ELEC 3400 Communication Systems	3
ELEC 3800 Random Signals and Systems	3		
	16		15

Senior

Fall	Hours	Spring	Hours
Core Social Science	3	PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3
ELEC 3060 Wireless Design Lab	1	ELEC 4000 Senior Design Projects	3
ELEC 5100 Wireless Communication Systems	3	ELEC 5110 Wireless Networks	3
Select one of the following:	3	Wireless Elective/ROTC	3
ELEC 5130 RF Devices and Circuits ²		Free Elective/ROTC	3
ELEC 5220 Information Networks and Technology ³		UNIV 4AA0 University Graduation	0
Select one of the following:	3		
ELEC 5410 Digital Signal Processing ²			
ELEC 5120 Telecommunication Networks ³			
Select one of the following:	3		
Math/Science Elective ²			

INSY 3410 Deterministic Operations Research³

16

15

Total Hours: 128

- ¹ Student must complete a sequence in either literature or history
- ² Hardware Specialization requires ELEC 5130, ELEC 5410, and a Math/Science Elective
- ³ Network Specialization requires ELEC 5120, ELEC 5220, and INSY 3410

Technical Elective - see adviser for approved course listing.

Joint Wireless Engineering-Software Option

Freshman

Fall	Hours	Spring	Hours
Core History	3	Core History or Social Science ¹	3
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
ENGR 1100 Engineering Orientation	0	COMP 1210 Fundamentals of Computing I	3
ENGR 1110 Introduction to Engineering	2	PHYS 1610 Engineering Physics II	4
PHYS 1600 Engineering Physics I	4		
	16		17

Sophomore

Fall	Hours	Spring	Hours
MATH 2630 Calculus III	4	Core Social Science	3
MATH 2650 Linear Differential Equations	3	Core Literature	3
COMP 2210 Fundamentals of Computing II	4	MATH 2660 Topics in Linear Algebra	3
ELEC 2110 Electric Circuit Analysis	4	COMP 2710 Software Construction	3
ELEC 2200 Digital Logic Circuits	3	ELEC 2120 Linear Signals and Systems Analysis	3
	18		15

Junior

Fall	Hours	Spring	Hours
Core Social Science	3	COMP 3270 Introduction to Algorithms	3
Core Literature or Core Humanities ¹	3	COMP 3510 Embedded Systems Development	3
COMP 3240 Discrete Structures	3	COMP 3710 Wireless Software Engineering	3
COMP 3350 Computer Organization and Assembly Language Programming	3	INSY 3600 Engineering Economy	3
ELEC 3800 Random Signals and Systems	3	ELEC 3400 Communication Systems	3
	15		15

Senior

Fall	Hours	Spring	Hours
Select one of the following: Math/Science Elective ²	3	Select one of the following: COMP 5710 Software Quality Assurance ²	3

INSY 3410 Deterministic Operations Research ³	COMP 5340 Network Quality Assurance and Simulation ³	
PHIL 1020 Introduction to Ethics <i>or</i> 1040 Business Ethics	3 COMP 4730 Computer Ethics	1
COMP 4320 Introduction to Computer Networks	3 COMP 4710 Senior Design Project	3
ELEC 3060 Wireless Design Lab	1 COMP 5360 Wireless and Mobile Networks	3
Select one of the following:	3 Wireless Elective/ROTC	3
COMP 5700 Software Process ²	Core Fine Arts	3
ELEC 5120 Telecommunication Networks ³	UNIV 4AA0 University Graduation	0
Free Elective/ROTC	3	
	16	16

Total Hours: 128

- ¹ Student must complete a sequence in either literature or history
- ² Software Specialization requires COMP 5700, COMP 5710, and a Math/Science Elective
- ³ Network Specialization requires INSY 3410, COMP 5340, ELEC 5120

Wireless Elective, Math/Science Elective: See adviser for approved course listing.

Industrial and Systems Engineering

Industrial and Systems Engineers plan, design, implement, and analyze systems. This engineering discipline is where technology, people, business and information intersect. The degree provides graduates with broad, flexible career opportunities with manufacturing, consulting, service or governmental organizations. The degree can also provide the foundation and background for further studies in engineering and business as well as professions such as law or medicine. The curriculum builds on a solid engineering mathematics and science core and adds courses in production and manufacturing, ergonomics and safety, engineering management, operations research, statistics, quality control, and information technologies. The curriculum graduates students who have:

- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to design and conduct experiments, as well as to analyze and interpret data.
- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- An ability to function on multidisciplinary teams.
- An ability to identify, formulate, and solve engineering problems.
- An understanding of professional and ethical responsibility.
- An ability to communicate effectively.
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- A recognition of the need for, and an ability to engage in, life-long learning.
- A knowledge of contemporary issues.
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- An ability to design, develop, implement, and improve integrated systems that include people, materials, information, equipment, and energy.
- An ability to integrate systems using appropriate analytical, computational, and experimental practices.

Major

- Industrial and Systems Engineering (p. 254)

Minor

- Automotive Engineering and Manufacturing (p. 253)
- Business Engineering Technology (p. 253)
- Nuclear Power Generation Systems (p. 255)

Automotive Engineering and Manufacturing Minor

Students in any engineering major may choose to minor in automotive engineering and manufacturing. Three curriculum tracks are available: industrial and systems engineering, mechanical engineering, and car team tracks. The courses required for the minor may require prerequisites that will not count toward the student's major or toward the minor.

The minor requires successful completion of 15-16 semester credit hours as shown below:

Industrial and Systems Engineering Track

MECH 4430	Ground Vehicle Fundamentals	3
INSY 5800	Lean Production	3
INSY 5840	Control of the Manufacturing Floor and Processes	3
INSY 5860	Automotive Manufacturing Systems	3
INSY 5330 or INSY 5830	Data Based Decision Making Using Six Sigma Vehicle Technology and Trends	3
Total Hours		15

Mechanical Engineering Track

MECH 4420	Vehicle Dynamics	3
MECH 4430	Ground Vehicle Fundamentals	3
MECH 5830	Engines	3
INSY 5800	Lean Production	3
INSY 5860	Automotive Manufacturing Systems	3
Total Hours		15

SAE Team Track ¹

MECH 4430	Ground Vehicle Fundamentals	3
MECH 4440	Automotive Design Experience I	2
MECH 4450	Automotive Design Experience II	2
INSY 5800	Lean Production	3
INSY 5840	Control of the Manufacturing Floor and Processes	3
INSY 5860	Automotive Manufacturing Systems	3
Total Hours		16

¹ Approval of department and car team advisor required.

Business-Engineering-Technology

Students who minor in Business-Engineering-Technology learn, practice, and integrate entrepreneurship, engineering, and business management skills demanded by the technology-driven global economy, solve real-world case study and design problems, and work in cross-functional teams. The minor is a joint offering by the Colleges of Business and Engineering. Admission to the minor is competitive. To remain in the program, the cumulative GPA must be equal to or greater than 3.0.

BUSI 3510	Introduction to Business and Engineering	3
BUSI 3520	Integrating Business and Engineering Theories with Practice	3

BUSI 3550	Cross-Functional Teamwork	1
BUSI 3560	Leadership	1
BUSI 4540	Entrepreneurship and Strategic Management of Technology and Innovation	4
BUSI 4970	Capstone Project I: Design Proposal	1
BUSI 4980	Product/Process Design and Development II	3
Total Hours		16

Curriculum in Industrial and Systems Engineering

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core Fine Arts	3	Core History	3
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
CHEM 1030 Fundamentals Chemistry I	3	PHYS 1600 Engineering Physics I	4
CHEM 1031 Fundamental Chemistry I Laboratory	1	COMP 1200 Introduction to Computing for Engineers and Scientists	2
ENGR 1100 Engineering Orientation	0		
ENGR 1110 Introduction to Engineering	2		
	16		16

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	MATH 2660 Topics in Linear Algebra	3
PHYS 1610 Engineering Physics II	4	ENGR Elective ²	3
MATH 2630 Calculus III	4	INSY 3020 Occupational Safety Ergonomics	3
MATH 2650 Linear Differential Equations	3	INSY 3021 Methods Engineering, Work Measurement and Ergonomics Laboratory	3
STAT 3600 Probability and Statistics I	3	STAT 3610 Probability and Statistics II	3
		STAT 3611 Probability and Statistics II Laboratory	1
	17		16

Junior

Fall	Hours	Spring	Hours
Core History or Social Science ¹	3	Core Social Science	3
COMP 3010 Spreadsheet-Based Applications with Visual Basic	3	Technical Elective ²	3
INSY 3400 Stochastic Operations Research	3	INSY 3420 Simulation	3
INSY 3410 Deterministic Operations Research	3	INSY 3700 Operations Planning and Control	3
INSY 3600 Engineering Economy	3	INSY 3800 Manufacturing Systems I	3
	15		15

Senior

Fall	Hours	Spring	Hours
Select one of the following:	3	Core Literature or Humanities ¹	3

PHIL 1020 Introduction to Ethics (Core Humanities)	Core Social Science	3
PHIL 1030 Ethics and the Health Sciences (Core Humanities)	INSY 4800 Senior Design	3
PHIL 1040 Business Ethics (Core Humanities)	INSY Elective	3
ELEC 3810 Fundamentals of Electrical Engineering	3 Technical Elective ²	3
INSY 4330 Statistical Quality Design and Control	3 UNIV 4AA0 University Graduation	0
INSY 4500 Professional Practice	1	
INSY 4700 Manufacturing Systems II	3	
INSY Elective	3	
	16	15

Total Hours: 126

¹ Student must complete sequence in either literature or history

² See advisor for approved course listing.

Nuclear Power Generation Systems Minor

This 17-hour minor prepares Auburn engineering students for careers specializing in the support and service of America's nuclear power generation industry. Students who complete this minor will have demonstrated an understanding of the industry's basic construction techniques, power plant models, integration into the national electrical grid and common reactor plant operations. Coursework for the minor will take place in the classroom as well as on-site at nuclear power generating facilities, and will be led by faculty and nuclear industry leaders. Areas of emphasis include: regulation, safety, reliability and dependability, radiological health and work control practices, and training requirements for operators and maintenance technicians.

ENGR 2700	Nuclear Power Operations, System and Careers	1
ENGR 3710	Basic Nuclear I: Nuclear and Mechanical Systems	4
ENGR 3720	Basic Nuclear II: Materials, Electric, Electronics	4
ENGR 4710	Advanced Reactor Operations I: Health and Safety	4
ENGR 4720	Advanced Reactor Operations II: Safe Operations	3
Total Hours		16

Mechanical Engineering

The curriculum in Mechanical Engineering focuses on the analysis, design, manufacturing, and maintenance of mechanical components and systems. Emphasis is placed on the fundamental concepts of engineering science and design needed in a variety of industries, including automotive, aerospace, biotechnology, material and chemical processing, microsystems and sensors, nanotechnology, machinery and robotics, pharmaceutical, energy production and distribution, heating and refrigeration, food production and processing, entertainment, pulp and paper, weapons systems, and many others. Mechanical engineering students take courses in several areas of engineering including: mechanics of rigid and deformable solids, thermo-fluid sciences, energy systems, dynamic systems and controls, design and manufacturing, materials, and electronics.

The educational objectives of the Mechanical Engineering program are to produce graduates who will be:

- Engaged in careers where they apply knowledge of the fundamental subject areas of mechanical engineering science to the analysis, design, and manufacture of mechanical devices and systems.
- Proficient in a broad array of professional skills, including engineering software tools, oral and written communication, leadership, and teamwork.

- Aware of the importance of, and engage in the process of lifelong learning through self-study, continuing education courses, and graduate-level education.
- Knowledgeable in a broad range of contemporary issues, particularly as they impact the mechanical engineering profession.

Students are able to concentrate on areas of special interest through technical elective courses taken in the senior year. In addition, specialized concentrations are offered in Automotive Engineering and in Pulp and Paper Engineering. Minors are offered in Tribology, Business Engineering and Technology, and in Automotive Engineering and Manufacturing.

Materials Engineering

The curriculum in Materials Engineering (MATL) is structured to address problems associated with the design of materials and materials processes to meet specific needs for a variety of industries. Emphasis is on the basic sciences and principles of engineering with applications of these principles to materials behavior. The student must obtain a broad foundation in chemistry, physics and mathematics, which is applied in engineering courses. Within materials engineering courses, students obtain a foundation in the major areas of materials science and to the major classes of engineering materials, which is applied in courses in materials properties and selection, computational methods and in a capstone design course. Students gain in-depth experience in another engineering discipline through coordinated technical elective sequences. Students may design alternative cross-disciplinary sequences, but they must be coordinated and approved by the Materials Engineering Curriculum Committee. The objective of the MATL program is to produce graduates who are engaged in careers through which they apply materials engineering proficiency, effective communication and lifelong learning to provide technical, economic, or other benefits to society.

Major

- Materials Engineering (p. 256)
- Mechanical Engineering (p. 257)

Minor

- Automotive Engineering and Manufacturing (https://nextbulletin.auburn.edu/undergraduate/samuelginncollegeofengineering/departments/industrialandsystemsengineering/automotiveeng_manufacturing_minor)
- Tribology (p. 259)
- Materials Engineering Minor (p. 259)
- Materials Science Minor (p. 259)

Curriculum in Materials Engineering

Freshman

Fall	Hours	Spring	Hours
CHEM 1030 Fundamentals Chemistry I	3	MATH 1620 Calculus II	4
CHEM 1031 Fundamental Chemistry I Laboratory	1	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	PHYS 1600 Engineering Physics I	4
ENGL 1100 English Composition I	3	Core History	3
Core History	3	ENGR 1110 Introduction to Engineering	2
COMP 1200 Introduction to Computing for Engineers and Scientists	2		
ENGR 1100 Engineering Orientation	0		
	16		16

Sophomore

Fall	Hours	Spring	Hours
CHEM 1040 Fundamental Chemistry II	3	PHYS 1610 Engineering Physics II	4

CHEM 1041 Fundamental Chemistry II Laboratory	1	STAT 3010 Statistics for Engineers and Scientists	3
ECON 2020 Principles of Microeconomics	3	MATH 2650 Linear Differential Equations	3
PHIL 1020 Introduction to Ethics	3	ENGR 2070 Mechanics of Materials	3
MATH 2630 Calculus III	4	MATL 2100 Introduction to Materials Science	3
ENGR 2050 Statics	3		
	17		16

Junior

Fall	Hours	Spring	Hours
MATH 2660 Topics in Linear Algebra	3	Core Fine Arts	3
Core Social Science		ENGR 2200 Introduction To Thermodynamics, Fluids And Heat Transfer	3
ELEC 3810 Fundamentals of Electrical Engineering	3	MATL 3200 Engineering Materials Polymers	3
MATL 3100 Engineering Materials - Metals	3	MATL 3201 Polymer and Composites Laboratory	1
MATL 3101 Metallography Laboratory	1	MATL 3300 Engineering Materials - Ceramics	3
MATL 5200 Crystallography	2	Technical Elective	3
MATL 5201 X-Ray Diffraction Laboratory	1		
	16		16

Senior

Fall	Hours	Spring	Hours
Core Literature	3	Core Literature	3
MATL 4500 Materials Properties and Selection	4	MATL 4980 Senior Design Project	3
MATL 5100 Thermodynamics of Materials Systems	3	MATL 5300 Phase Transformations in Material Processing	3
MATL 5400 Physics of Solids	3	MATL 5500 Numerical Simulation of Materials Processing	3
Technical Electives	3	Technical Electives	3
		UNIV 4AA0 University Graduation	0
	16		15

Total Hours: 128

Technical electives: see adviser for approved list of courses.

Curriculum in Mechanical Engineering

Freshman

Fall	Hours	Spring	Hours
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
ENGL 1100 English Composition I	3	PHYS 1600 Engineering Physics I	4
Core History	3	ENGL 1120 English Composition II	3
CHEM 1030 Fundamentals Chemistry I	3	Core History or Core Social Science ¹	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	ENGR 1110 Introduction to Engineering	2
COMP 1200 Introduction to Computing for Engineers and Scientists	2		

ENGR 1100 Engineering Orientation	0	
	16	16
Sophomore		
Fall	Hours Spring	Hours
PHYS 1610 Engineering Physics II	4 MATH 2660 Topics in Linear Algebra	3
MATH 2630 Calculus III	4 ENGR 2010 Thermodynamics	3
MATH 2650 Linear Differential Equations	3 MATL 2100 Introduction to Materials Science	3
MECH 2110 Statics and Dynamics	4 MECH 2AA0 Mechanical Engineering Progress Assessment I	0
	MECH 2120 Kinematics and Dynamics of Machines	4
	MECH 2220 Computer-Aided Engineering	3
	15	16
Junior		
Fall	Hours Spring	Hours
ELEC 3810 Fundamentals of Electrical Engineering	3 INSY 3600 Engineering Economy	3
MECH 3020 Thermodynamics II	3 MECH 3AA0 Mechanical Engineering Progress Assessment II	0
MECH 3030 Fluid Mechanics	3 MECH 3040 Heat Transfer	3
MECH 3130 Mechanics of Materials	4 MECH 3050 Measurement and Instrumentation	3
MECH 3200 Concepts in Design and Manufacturing	2 MECH 3140 System Dynamics and Controls	3
MECH 3210 Design and Manufacturing Lab	1 MECH 3230 Machine Design	3
	16	15
Senior		
Fall	Hours Spring	Hours
ENGL 2200 World Literature before 1600	3 World Literature II or Core Humanities ¹	3
Core Social Science	3 Core Social Science	3
PHIL 1020 Introduction to Ethics or 1040 Business Ethics (Core Ethics)	3 Core Fine Arts	3
MECH 4240 Comprehensive Design I	2 MECH 4250 Comprehensive Design II	2
Technical Elective	6 Technical Elective	3
	Free Elective	3
	UNIV 4AA0 University Graduation	0
	17	17

Total Hours: 128

¹ Student must complete sequence in either literature or history

² May substitute MECH 4440/MECH 4450 for MECH 4240/MECH 4250 with departmental approval.

Technical Elective - see adviser for approved course listing.

Material Engineering Minor

Students completing this 15-hour minor will have an understanding structure-property relationships of different types of materials and be able to apply this understanding to the processing and selection of materials for engineering applications. The minor includes courses that focus on each of the major classes of materials (metals, polymer and ceramics) and includes an elective to allow students to pursue their particular areas of interest. The minor will provide students in other disciplines with a better understanding of materials related to their particular interests.

Required Courses

MATL 2100	Introduction to Materials Science	3
MATL 3100	Engineering Materials - Metals	3
MATL 3200	Engineering Materials Polymers	3
MATL 3300	Engineering Materials - Ceramics	3

Elective Courses (at least 3 credit hours from the following)

MATL 2210	Materials for Sustainable Energy Production and Storage	1
MATL 2220	Materials and the Environment	1
MATL 2230	Mineral Resources: Processing and Availability	1
MATL 3101	Metallography Laboratory	1
MATL 3201	Polymer and Composites Laboratory	1
MATL 4500	Materials Properties and Selection	4
MATL 5600	Corrosion ¹	3
MATL 5700	Biomaterials ¹	3
MATL 5750	Microstructure and Mechanics of Skeletal Tissues ¹	3

¹ These courses aren't offered every year.

Materials Science Minor

Students completing this 15-hour minor will have an understanding science underlying the structure-property relationships in solid state materials. The minor provides student with understanding of the solid state chemistry and physics that are applied to control materials properties and design fabrication processes. The minor can provide complementary scientific understanding to engineering students or demonstrate application of science to materials properties to students from the sciences.

Required Courses

MATL 2100	Introduction to Materials Science	3
MATL 5100	Thermodynamics of Materials Systems	3
MATL 5200	Crystallography	2
MATL 5201	X-Ray Diffraction Laboratory	1
MATL 5300	Phase Transformations in Material Processing	3

Elective Courses (3 credit hours from the following)

MATL 5400	Physics of Solids	3
PHYS 5610	Introduction to Solid State Physics	3

Tribology Minor

This 15-hour multidisciplinary minor prepares students from various science and engineering majors for careers that require a background in friction, wear and lubrication (tribology). Students will be prepared for not only the lubricant and bearing manufacturing industry, but for design and maintenance in the power generation, vehicle, and manufacturing industries. Students who complete this minor will acquire the skills necessary to identify critical parameters in a tribological system, design a tribological system for the needs of a specific application, including geometry, lubricant, and surface properties. Students will also understand the chemical formulation and operating mechanisms of lubricants and additives.

Courses required

MECH 5230	Friction, Wear and Lubrication	3
PFEN 5300	Rheology	3
CHEM 2080	Organic Chemistry II	3

Electives courses

BUSI 3510	Introduction to Business and Engineering	3
MATL 5600	Corrosion	3
MECH 5240	Boundary and Full-Film Lubrication	3
MECH 5270	Metalworking and Manufacturing Tribology	3
CHEN 5660	Macroscale Assembly and Applications of Nanomaterials	3
MECH 5970	Intermediate Special Topics in Mechanical Engineering	3

Polymer and Fiber Engineering

Bachelor of Polymer and Fiber Engineering

Polymers and fibers are high performance materials utilized in such diverse fields as plastics, elastomers (rubber), adhesives, surface coatings (paints), films, paper, packaging, insulation, filtration, aerospace, automotive, biomedical, composite, construction, environmental, industrial, marine, nonwoven, recreational, and safety materials.

Polymer and fiber engineering prepares graduates to work in research and development, product development, process engineering, composite engineering, quality engineering, industrial engineering, or technical sales; or to proceed to advanced studies in engineering, science, medicine, law, computer, business, or related fields.

Research and instruction in polymer and fiber engineering includes:

- Polymer synthesis and processing.
- Characterization and evaluation of structure and properties of polymeric materials using advanced techniques and state-of-the-art instrumentation.
- Modeling of structure-property-performance relationships emphasizing correlation of properties with the structure across nano-, micro-, and macro-length scales.
- Design, analysis, engineering, and assembly of polymeric fibrous materials into advanced engineered materials with novel compositions and tailored microstructures.
- Product, mold, and die design.

A solid foundation in mathematics, chemistry, and physics is applied in engineering and major courses during junior and senior years. Engineering design is integrated throughout the curriculum in major courses, laboratories, and a capstone design project which is completed during the senior year.

To accommodate the broad range of polymer and fiber opportunities, the undergraduate program offers two options leading to the bachelor of polymer and fiber engineering. The polymer option emphasizes polymer characterization, processing, and chemistry. The fiber option emphasizes the mechanics of composite materials and other fibrous structures.

Graduates will be actively engaged in one or more of the following:

The practice of engineering:

- Evidence of increasing responsibilities in the form of promotions, management or leadership duties, or other professional activities while employed in industrial, governmental, educational or consulting positions
- Evidence of recognitions and awards.
- Evidence of contributing to their chosen field of practice through the development and dissemination of technical knowledge, presentations, publications, patents, or other means.
- Evidence of meeting professional responsibilities in the form of mentoring, professional society activities, peer review, editorial work, or similar activities.
- The acquisition of new knowledge and skills.

- Evidence of pursuit of an advanced degree.
- Evidence of participation in ongoing professional development activities.
- Activities which meet their ethical responsibilities for public service:
 - Evidence of involvement in community service.
 - Evidence of involvement in K-12 education.
 - Evidence of providing input to policy makers.

Major

- Polymer and Fiber Engineering (Fiber Option) (p. 261)
- Polymer and Fiber Engineering (Polymer Option) (p. 262)

Curriculum in Polymer and Fiber Engineering (Fiber Option)

(Fiber Option)

Freshman

Fall	Hours	Spring	Hours
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History	3	Core History or Social Science ¹	3
ENGR 1110 Introduction to Engineering	2	COMP 1200 Introduction to Computing for Engineers and Scientists	2
		ENGR 1100 Engineering Orientation	0
	16		16

Sophomore

Fall	Hours	Spring	Hours
PFEN 2270 Introduction to Engineered Fibrous Materials	4	Select one of the following:	3
MATH 2630 Calculus III	4	PHIL 1020 Introduction to Ethics	
PHYS 1600 Engineering Physics I	4	PHIL 1030 Ethics and the Health Sciences	
STAT 3010 Statistics for Engineers and Scientists	3	PHIL 1040 Business Ethics	
		CHEM 2030 Survey of Organic Chemistry	3
		MATH 2650 Linear Differential Equations	3
		PHYS 1610 Engineering Physics II	4
		ENGR 2050 Statics	3
	15		16

Junior

Fall	Hours	Spring	Hours
Core Literature	3	Core Literature or Core Humanities ¹	3
MATH 2660 Topics in Linear Algebra	3	INSY 3600 Engineering Economy	3
ENGR 2070 Mechanics of Materials	3	Free Elective or ROTC	3

ENGR 2200 Introduction To Thermodynamics, Fluids And Heat Transfer	3	PFEN 3400 Fundamentals of Coloration	4
PFEN 3100 Fundamentals of Polymers	3	PFEN 3500 Structure and Properties of Polymers and Fibers	3
PFEN 3570 Engineered Protective Materials	3		
	18		16
Senior			
Fall	Hours	Spring	Hours
Core Fine Arts	3	Core Social Science	3
ELEC 3810 Fundamentals of Electrical Engineering	3	Core Social Science	3
PFEN 4300 Engineered Fibrous Structures	4	PFEN 4500 Fiber Reinforced Materials	3
PFEN 4400 Mechanics of Flexible Structures	3	PFEN 4820 Polymer and Fiber Engineering Design II	3
PFEN 4810 Polymer and Fiber Engineering Design I	3	Technical Elective or ROTC	3
		UNIV 4AA0 University Graduation	0
	16		15

Total Hours: 128

¹ Student must complete a sequence in either literature or history.

Technical Elective - see adviser for approved course listing.

Curriculum in Polymer and Fiber Engineering (Polymer Option)

Freshman

Fall	Hours	Spring	Hours
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History	3	Core History or Social Science ¹	3
ENGR 1110 Introduction to Engineering	2	COMP 1200 Introduction to Computing for Engineers and Scientists	2
		ENGR 1100 Engineering Orientation	0
	16		16

Sophomore

Fall	Hours	Spring	Hours
CHEM 2070 Organic Chemistry I	3	Select one of the following:	3
CHEM 2071 Organic Chemistry I Laboratory	1	PHIL 1020 Introduction to Ethics	
MATH 2630 Calculus III	4	PHIL 1030 Ethics and the Health Sciences	
PHYS 1600 Engineering Physics I	4	PHIL 1040 Business Ethics	
PFEN 2270 Introduction to Engineered Fibrous Materials	4	CHEM 2080 Organic Chemistry II	3

MATH 2650 Linear Differential Equations	3
PHYS 1610 Engineering Physics II	4
ENGR 2050 Statics	3

16 16

Junior

Fall	Hours	Spring	Hours
Core Literature	3	Core Literature or Humanities ¹	3
MATH 2660 Topics in Linear Algebra	3	Core Social Science	3
ENGR 2070 Mechanics of Materials	3	INSY 3600 Engineering Economy	3
ENGR 2200 Introduction To Thermodynamics, Fluids And Heat Transfer	3	PFEN 3500 Structure and Properties of Polymers and Fibers	3
STAT 3010 Statistics for Engineers and Scientists	3	Free Elective or ROTC	3
PFEN 3100 Fundamentals of Polymers	3		
	18		15

Senior

Fall	Hours	Spring	Hours
Core Fine Arts	3	Core Social Science	3
ELEC 3810 Fundamentals of Electrical Engineering	3	PFEN 4100 POLYMER CHARACTERIZATION	4
PFEN 4200 Polymers from Renewable Resources	2	PFEN 4500 Fiber Reinforced Materials	3
PFEN 4810 Polymer and Fiber Engineering Design I	3	PFEN 4820 Polymer and Fiber Engineering Design II	3
Technical Elective or ROTC	3	PFEN 5200 Polymer Processing	4
		UNIV 4AA0 University Graduation	0
	14		17

Total Hours: 128

¹ Student must complete a sequence in either literature or history.

Technical Elective - see adviser for approved course listing.

Wireless Engineering

The wireless engineering curriculum is a joint offering of the Department of Electrical and Computer Engineering and the Department of Computer Science and Software Engineering, leading to the bachelor of wireless engineering (BWE). To meet the need for engineers that can improve life and business in these times of a mobile society, the educational objectives of this curriculum are (1) to develop within our graduates a basic foundation in wireless engineering and either electrical engineering, software engineering, or communication networks that will provide the technical proficiency needed for the professional practice of engineering in the wireless industry, (2) to develop within our graduates the ability to communicate their ideas effectively within the technical community and to the general public, (3) to provide our graduates with the basis for, and instill within them an appreciation of and enthusiasm for, lifelong scientific inquiry, learning and creativity, and (4) to prepare our graduates to take their places in society as responsible citizens, with an appreciation of and understanding for the need to maintain the highest ethical standards in their personal and professional lives. Graduates of this program will be able to analyze, develop, design, test, administer and support wireless network systems, communication devices, and other components used in wireless computer and telecommunication networks.

The BWE curriculum has two formal options - wireless engineering-hardware (WIRE) (p. 249), emphasizing a hardware design-oriented approach to wireless engineering, and wireless engineering-software (WIRS) (p. 251), emphasizing a software-oriented approach. There is a network specialization within each option. Students interested in designing wireless hardware, such as integrated circuit chips, wireless communication devices, and wireless network switching equipment, should choose the WIRE hardware specialization

option. Students interested in application software development, including server-side, client-side, and embedded applications, should choose the WIRS software specialization option. Students interested in pursuing a career with wireless service providers and other companies that develop and maintain wireless networks and sell service, can choose the Network Specialization within either the WIRE option or the WIRS option.

Each curriculum builds upon a solid foundation in mathematics, science, and electrical or software engineering fundamentals to introduce wireless communications theories, devices, circuits, systems, networks, standards, management, and applications. Design experience is interwoven throughout the curriculum by introducing basic design concepts early, emphasizing hands-on design experiences in the laboratories, including effective use of computers and other modern engineering tools, and culminating with a capstone design project in the senior year. In addition to its technical aspects, the curriculum emphasizes oral and written communication skills, the importance of business, economic, social and global forces on engineering, appreciation of the need to maintain the highest ethical standards, and the maintenance of professional competence through continued self-improvement after graduation.

Joint Wireless Engineering options:

- Hardware option (p. 249)
- Software option (p. 251)

Minors

School of Forestry and Wildlife Sciences

JAMES P. SHEPARD, *Dean*

EDWARD F. LOEWENSTEIN, *Associate Dean of Academic Affairs*

GRAEME LOCKABY, *Associate Dean of Research*

THE SCHOOL OF FORESTRY AND WILDLIFE SCIENCES has a long tradition of offering educational programs that prepare graduates for employment in a wide variety of natural resource professions. Natural areas, forests and their associated resources play a unique and increasingly important role in contemporary society. They enhance both economic development and environmental quality. The School's programs emphasize a comprehensive understanding of interrelationships between the functions and values of diverse renewable natural resources. This awareness is essential to effective management and, ultimately, to meeting society's needs.

In keeping with the University's land-grant mission, the School's goals are to pursue excellence in education, research, and extension (including outreach and public service activities) focused on the forests, wildlife, and associated resources of Alabama and the southeastern United States. With respect to undergraduate education, this focus is on preparing graduates who have the necessary skills for initial employment, with the breadth and depth of educational background to support professional growth and continued career advancement. The result of this directed effort from an energized faculty and administration are motivated graduates who have the foundation to master the art and science of managing wild lands for the betterment of both the local and global communities.

If you would like to speak to someone about the programs in the school of Forestry and Wildlife Sciences, please call the Director of Student Services at (334) 844-1050, the Coordinator of Student Services at (334) 844-1001 or send an email to workingwithnature@auburn.edu.

Web Site

Students are encouraged to visit the school's website (<http://www.auburn.edu/sfws>) which provides information on the school's programs and faculty, as well as updates on courses, scheduling, practicum details, and events of interest to School.

Course Prefixes for the School of Forestry and Wildlife Sciences

Course prefixes for courses in the School of Forestry and Wildlife Sciences (SFWS) are FORY (forestry), FOEN (forestry engineering), FOPR (forest products), WILD (Wildlife) and FOWS (SFWS common courses).

Curricula and Options

The School of Forestry and Wildlife Sciences offers undergraduate curricula leading to bachelor of science (BS) degrees in forestry, natural resources management, wildlife ecology and management, and a wildlife sciences- pre-veterinary medicine concentration. A forest engineering option is available under the bachelor of biosystems engineering (BSEN) degree program. It is offered in conjunction

with the Samuel Ginn College of Engineering. Links to more information and the curricula models for each of these majors are found at the bottom of this page.

Students in the SFWS with exceptional academic qualifications should also consider enrollment in the University's Honors College. This opportunity is described under Special Academic Opportunities in the Academic Policies section of the Bulletin and carries a number of significant benefits to qualified students.

Accreditation

The bachelor's programs in forestry and the forest engineering option in biosystems engineering (the latter with addition of the forest resources minor) are accredited by the Society of American Foresters (SAF). SAF is the accrediting body recognized by the Council on Higher Education Accreditation as the accrediting agency for forestry education in the United States. Graduation from such SAF-accredited programs is required of all applicants for Registered Forester status in Alabama and several other states. The biosystems engineering program with the forest engineering option is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). Completion of the wildlife sciences degree program qualifies the graduates for certification as associate wildlife biologists by The Wildlife Society. Completion of the wildlife pre-vet concentration prepares students for continuing to a college of veterinary medicine or other health-oriented study.

Scholars Program in Forestry

Qualified forestry students are encouraged to consider participation in the Scholars Program in Forestry. This program provides qualified students an opportunity to explore areas beyond the forest emphases listed above in which they are particularly interested and/or to prepare for graduate study. Students with at least 3 semesters remaining in the Forestry curriculum, and with a minimum 3.3 GPA overall or 3.0 in courses in the Forestry core curriculum, may apply for admission to the program by petition to the student's academic advisor and the dean. Under the guidance of the faculty advisor, and with dean's approval, the student develops an emphasis schedule to fit their unique interests. The Scholars Emphasis must include FORY 4980 Senior Capstone Project in addition to a minimum of 11 semester hour credits in courses at the 3000-level or above.

Forest Engineering Option

The Department of Biosystems Engineering in conjunction with the Samuel Ginn College of Engineering and the School of Forestry and Wildlife Sciences offers an accredited degree in biosystems engineering with a forest engineering option. Graduates are qualified to pursue Professional Engineering (PE) credentials. To receive a Society of American Foresters accredited degree and be eligible to become a registered forester in the state of Alabama, students must complete the forest track in Biosystems Engineering and the forest resources minor in the School of Forestry and Wildlife Sciences.

This program is committed to preparing students for productive professional careers in the forest products industry and related natural resource and environmental systems sectors. Specific educational objectives of the program are: 1) graduates solve engineering problems such as those associated with the environment and natural resources, and the production, processing, storage, manufacture, utilization, and recycling of biological products; 2) graduates develop solutions to problems that combine engineering and biological sciences; 3) graduates develop environmentally and economically feasible and practical design solutions; and 4) graduates expand the role of engineering in society, communicate effectively, practice in a professional and ethical manner, and provide leadership in the profession.

The curriculum is coordinated by the Samuel Ginn College of Engineering and the School of Forestry and Wildlife Sciences. Students register in the Samuel Ginn College of Engineering and are assigned academic advisors in Biosystems Engineering and in Forestry. Beginning students should apply to the Samuel Ginn College of Engineering and complete the Pre-Forestry Engineering, program. (See the Samuel Ginn College of Engineering, Department of Biosystems Engineering section for the curriculum model, and detailed admission and degree requirements.)

Military Science

In all curricula within the School of Forestry and Wildlife Sciences, electives may include any number of Basic ROTC or Advanced ROTC. In curricula which do not provide sufficient electives for this purpose, ROTC may be taken in lieu of required courses outside of the major and not in the university core, to be selected with the approval of a School advisor. Common courses selected are WILD 4910 wildlife summer practicum, Natural Resource Electives, and forestry emphasis hours.

Admission Requirements and Academic Standards

General Requirements

Freshman eligibility for the School of Forestry and Wildlife Sciences is determined by Enrollment Services. They may be reached at their website (<http://www.auburn.edu/enrollment>) or by phone at (334) 844-6425. However, since the requirements for forestry and wildlife education necessitate high school preparatory work of high intellectual quality and considerable breadth, the following program is recommended: English (4 units), mathematics (including algebra, geometry, trigonometry and analytic geometry) (4 units), chemistry (1 unit), biology (1 unit), physics (1 unit), history, literature or social science (2 or 3 units), and foreign languages (1 unit). Freshmen in Forestry are admitted to the Pre-Forestry (PFOR) curriculum. Wildlife Ecology and Management students are admitted directly into the Wildlife Ecology and Management curricula (WLDE) and Natural Resources Management students are admitted directly into the Natural Resources Management curricula (NATR).

Transfers from other institutions must apply through Enrollment Services. The exact placement of transfer students can be determined only upon review of their transcripts by the Registrar's Office and the School of Forestry and Wildlife Sciences.

Credit toward a degree in the School of Forestry and Wildlife Sciences will not be allowed for mathematics, chemistry or physics courses at a lower level than those specified in the curriculum for the degree sought. Students who are not prepared to take the courses prescribed should take lower level remedial courses without degree credit.

Transfer Credits

Transfer credit for forestry and wildlife courses not considered equivalent to those required in the chosen curriculum may be substituted for elective credit. However, duplication of credit will not be allowed. Equivalency of forestry and wildlife courses will be determined by the Dean's Office. Students also may obtain credit for FORY, FOWS and WILD courses on the basis of validating examinations. Arrangements for validating examinations must be made with the Dean's Office. Transfer credit for upper-division courses in the major (greater than or equal to 3000-level) generally are not accepted for substitution.

Forestry Specific Requirements

The Professional Curriculum in Forestry (FORB) begins with the courses in the School of Forestry and Wildlife Sciences Summer Field Practicum as detailed in the major link at the bottom of this page. Students are admitted to this curriculum once a year during spring semester. To be considered for admission, a student must have completed, or be enrolled in all required courses in mathematics, statistics, biology, microeconomics, English, and chemistry, plus an additional nine credit hours from any other courses in the Pre-Forestry curriculum (PFOR).

To remain enrolled in the professional Forestry curriculum, students must maintain minimum GPA standards established by Auburn University. Students also must complete designated courses in the major with at least a 2.0 cumulative GPA. These major courses are designated in the curriculum model in the link at the bottom of this page.

Students in the FORY curriculum must attend the Forestry Practicum, which is scheduled for the summer term preceding the junior year and is held at the Solon Dixon Forestry Education Center near Andalusia, Alabama.

Forest Engineering Option Specific Requirements

Students are admitted to the professional Biosystems Engineering with Forest Engineering Option curriculum (FOEN) upon successful completion of the Pre-Forest Engineering (PFOE) program in the Samuel Ginn College of Engineering. Additional details on the Forest Engineering Option are available on the Samuel Ginn College of Engineering Biosystem page. Students pursuing the Forest Engineering Option must meet School of Forestry and Wildlife Sciences requirements for admission to the Forestry Summer Field Practicum, and must attend the Forestry Practicum. This summer hands-on experience is scheduled for the summer term preceding the junior year and is held at the Solon Dixon Forestry Education Center near Andalusia, Alabama.

Natural Resources Management Specific Requirements

Admission requirements for the Natural Resources Management curricula (NATR) are the same as for other SFWS majors and are set to match the requirements of Auburn University for any given year.

Students in the NATR curriculum must have a sequence of courses and selected embedded minor approved by their faculty advisor. This highly flexible curriculum should be customized to include the coursework for individual outdoor careers within the increasingly large number of jobs outside of the traditional forestry and wildlife fields.

To remain enrolled in the Natural Resources Management curriculum, students must maintain minimum GPA standards established by Auburn University. In addition to these standards, all required Natural Resources Management courses in the major with the prefix of

FOR, WILD or FOWS listed in the sophomore, junior and senior years must be completed with a grade of C or better. Grades lower than a C will not satisfy prerequisite requirements of successive listed courses and the course must be re-taken for credit toward the degree. Students also must complete designated courses in the major with at least a 2.0 cumulative GPA. These major courses are designated in the curriculum model in the link at the bottom of this page.

Wildlife Specific Requirements

Admission requirements for the Wildlife Ecology and Management curricula (WLDE) are the same as for other SFWS majors and are set to match the requirements of Auburn University for any given year.

Students in the WILD curriculum, as described by the model in the link below, must attend WILD 4910 Wildlife Summer Practicum, which is scheduled for the summer term preceding the senior year and is held at the Solon Dixon Forestry Education Center near Andalusia, Alabama in the south-central section of the state.

To remain enrolled in Wildlife Ecology and Management or the Wildlife Science, Pre-Veterinary Medicine Concentration curricula, students must maintain minimum GPA standards established by Auburn University. In addition to these standards, all required wildlife courses in Wildlife Ecology and Management (WILD and FOWS) listed in the sophomore, junior and senior years and all required wildlife courses in Wildlife Science, Pre-Veterinary Medicine Concentration (WILD) must be completed with a grade of C or better. Grades lower than a C will not satisfy prerequisite requirements of successive listed courses and the course must be re-taken for credit toward the degree. Students also must complete designated courses in the major with at least a 2.0 cumulative GPA. These major courses are designated in the curriculum model in the link at the bottom of this page.

Majors

- Forestry
- Natural Resources Management
- Wildlife Ecology and Management
- Wildlife Sciences, Pre-Veterinary Medicine Concentration

Minor

- Forest Resources (p. 267)
- Urban Environmental Science (p. 268)
- Watershed Sciences (p. 269)

Programs

- Applied Economics - PhD (p. 502)
- Forestry - MNR, MS, PhD (p. 512)
- Wildlife Sciences - MS, PhD (p. 547)

Majors

Minors

Forest Resources Minor

This minor is available only to students in the forest emphasis of the forest engineering option of the biosystems engineering degree in the Samuel Ginn College of Engineering. Completion of the minor is required for Registered Forester eligibility in the State of Alabama.

FOR 4190	Forest Measurements II	3
FOR 4230	Forest Ecology	3
FOR 5400	Forest Economics	3

FOR Y 5410	Forest Management and Administration	3
FOWS 5270	Natural Resource Policy	3
WILD 3280	Principles of Wildlife Management	3
FOR Y 5150	Forest Health	3
or FOR Y 4440	Forest Fire Management	
Total Hours		21

Urban Environmental Science Minor

The Urban Environmental Sciences minor was approved in spring 2013. This minor will prepare students to help cities meet the special challenges of managing natural resources in an urban environment. Urban environmental scientists will be involved in storm flow analysis, tree planting and care, grant proposals, and supervision of municipal employees. The courses required are shown in the table below.

15 hours required for Minor.

Core Electives (9 Hours Required)

FOWS 5050	Urban Ecology
FOR Y 5650	Urban Forestry
GEOG 5010	Urban Geography

Concentration Electives (minimum of 6 hours within or across concentrations)

Rural Sociology

RSOC 5650	Sociology of Natural Resources and the Environment
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Agronomy and Soils

AGRN 5080	Soil Resources and Conservation
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Landscape Architecture

LAND 5340	Urban Studies I: American Urban Landscapes
LAND 5350	Construction III: Hydrologies
LAND 5360	Dynamic Systems I: Urban Ecologies

Community Planning

CPLN 5000	History and Theory of Urban Form
CPLN 5010	Introduction to Community Planning
CPLN 5060	Transportation and Mobility
CPLN 5070	Planning and the Environment

Civil Engineering

CIVL 5230	Environmental Health Engineering
CIVL 5240	Air Pollution
CIVL 5330	Landfills
CIVL 5560	Transportation Planning

Economics

ECON 5100	Economics of Growth and Development
ECON 5200	Urban and Regional Economic Development

Entomology

ENTM 5340	Urban Forest Insects
ENTM 5360	Landscape Entomology

Horticulture

HORT 4270	Intermediate Landscape Design
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Forestry and Wildlife Sciences

FOR Y 5310	Environmental Ethics
FOWS 5320	Environmental Services

WILD 5410

Wildlife Damage Management

Note: Courses required for student major may not be used to satisfy concentration electives. This includes Restricted Elective Courses for the SFWS Natural Resource Management students.

Watershed Sciences Minor

Watershed science and management is an expanding field that involves managing the availability, quantity, and quality of water. Many major metropolitan areas and smaller cities rely on forested watersheds to purify the necessary drinking water for their populations. Many highly trained and dedicated professionals, knowledgeable in hydrology, climates, and water sciences, are needed in coming years to be certain this necessary commodity is provided to the United States and the world's growing populations.

15 hours required for minor.

Core Electives (10 hours required)

FORY 5240

Forest Watershed Management

FORY 5250

Wetland Ecology and Management

AGRN 5080

Soil Resources and Conservation

Concentration Electives (minimum of 5 hours within or across concentrations)

Agronomy and Soils

AGRN 2040

Basic Soil Science

AGRN 5000

Soils Environmental Quality

Biological Sciences

BIOL 4535

Coastal Zone Management

Landscape Architecture

LAND 5350

Construction III: Hydrologies

Fisheries and Allied Aquaculture

FISH 5220

Water Science

FISH 5520

Small Impoundment Management

FISH 5320

Limnology

Forestry and Wildlife Sciences

FOWS 5140

Watershed Services

FOWS 5220

Landscape Ecology

Geology and Geography

GEOL 4260

Introduction to Geochemistry

GEOL 5100

Hydrogeology

GEOG 2020

Physical Geography

GEOG 5210

Climatology

GEOG 5220

Geomorphology

Note: Courses required for student major may not be used to satisfy concentration electives. This includes Restricted Elective Courses for the SFWS Natural Resource Management students.

College of Human Sciences

JUNE M. HENTON, *Dean*

SUSAN S. HUBBARD, *Associate Dean*

JENNIFER KERPELMAN, *Associate Dean*

Human Sciences is a professional program central to the land-grant mission that draws from the natural and social sciences, the arts and humanities. It integrates and interrelates knowledge from these disciplines to advance the well-being of individuals, families, and consumers. The course of study provides a broad liberal education, specialized career preparation, as well as a background for individual and family living. Areas of specialization focus on aspects of environment, health, consumer products and services, and

human development. Human Sciences offers men and women professional and pre-professional preparation for careers in education, business, industry, social agencies, and government.

The College of Human Sciences includes the departments of Consumer and Design Sciences; Human Development and Family Studies; and Nutrition, Dietetics, and Hospitality Management. Programs of study leading to the bachelor of science degree can be planned within five curricula in the College of Human Sciences. These curricula are designed with flexibility to meet the needs of students with a variety of academic interests and goals. Program-specific accreditations/approvals/endorsements/certifications have been attained for several programs.

Transfer Requirements

To transfer into any undergraduate major in the College of Human Sciences, a student must have an institutional 2.0 GPA. To transfer into the Dual Objective Program with Human Development and Family Studies and the Early Childhood Education program in the College of Education (teacher education program), a student must have a minimum 2.5 GPA on all college coursework attempted and on all coursework attempted at Auburn.

Graduation Requirements

To earn the bachelor's degree from the College of Human Sciences, students must complete the hours and subject matter requirements of their curricula and must have a minimum grade-point average of 2.0 on all course work attempted at Auburn University, and in addition, a 2.0 cumulative grade-point average on all work attempted in the major.

Options in Cooperative Extension

Students enrolled in any of the majors in the college may prepare for a career in the Cooperative Extension System through election of certain courses as electives. Majors may fulfill the requirements of the Alabama Cooperative Extension System through scheduling of the following courses:

NTRI 2000	Nutrition And Health	3
NTRI 2050	Science Of Food	4
HDFS 4670	Parent Education	3
Select one of the following:		3-4
CADS 2400	Interior Materials and Components	3
CADS 2750	Product Development: Technical Design	4
CADS 3600	Textiles	4

Graduate Work

The college offers work leading to the master of science degree and PhD degree in consumer and design sciences; human development and family studies; and nutrition, dietetics, and hospitality management.

Majors

- Apparel Merchandising, Design and Production Management (Apparel Merchandising Option) (p. 274)
- Apparel Merchandising, Design and Production Management (Product Design and Production Management Option) (p. 273)
- Consumer and Design Sciences, ABM (p. 272)
- Hotel and Restaurant Management (p. 283)
- Human Development and Family Studies (p. 279)
- Interior Design (p. 276)
- Nutrition, ABM (https://nextbulletin.auburn.edu/undergraduate/collegeofhumansciences/departmentofnutritiondieteticsandhospitalitymanagment/nutrition_major)
- Nutrition (Nutrition/Dietetics Option) (p. 286)
- Nutrition (Nutrition Science Option) (p. 284)
- Nutrition (Wellness Option) (p. 287)

Minors

- Human Development and Family Studies (p. 280)

- Hunger Studies (p. 289)
- International Minor in Human Sciences (p. 277)
- Philanthropy and Nonprofit Studies (p. 278)

Program

- Consumer and Design Science - MS, PhD (p. 497)
- Human Development and Family Studies - MS, PhD (p. 518)
- Nutrition - MS, PhD (p. 526)

Consumer and Design Sciences

The Department of Consumer and Design Sciences focuses on consumers' interactions with their near physical environment. Two majors are offered: 1) Apparel Merchandising, Design and Production Management, and 2) Interior Design. These curricula focus on principles of design, product development, management, marketing science and technology, and consumer behavior. Majors in these curricula may lead to careers in business, industry, and government which apply knowledge to developing, evaluating and merchandising consumer products, interpreting consumers' wants and needs, informing consumers and designing environmental spaces. A senior-level internship is required in both curricula. Accelerated BS/MS programs are available in AMDP and INDS. Please contact department for additional information.

Apparel Merchandising, Design and Production Management

Apparel Merchandising, Design and Production Management is a professional curriculum with two options: 1) Apparel Merchandising (APME) and 2) Product Design and Production Management (APDP). Diversity within the major allows students to select such varied fields as apparel design, apparel production management, retail sales and/or management, apparel merchandising, retail buying, fashion journalism, and consumer-producer relations. A professionally supervised internship is required. The program is endorsed by the American Apparel and Footwear Association Human Resources Leadership Council.

Academic Standards and Policies: Students in both AMDP options must earn a grade of a C or higher in all prerequisite courses in the major, and have a cumulative GPA of 2.0, before being allowed to proceed to the next course in the sequence. Major courses include the Human Sciences college core courses and all required Consumer and Design Sciences courses which are indicated in bold print in the models. Students must earn a grade of C or higher on all required courses in the major to complete graduation requirements.

Interior Design

Interior Design is a four-year bachelor of science program accredited by the Council for Interior Design Accreditation (CIDA). The curriculum focuses on the design of the near environment, the aesthetic and functional aspects of space planning, furnishings and materials, lighting and mechanical equipment, and the integration of these aspects of the built environment to fit the needs of the user. A professionally supervised internship is required. Student work from courses in the major may be retained by the program for accreditation and exhibit purposes.

Academic Standards and Policies: Freshman and transfer students admitted to Auburn University, as well as internal transfer students from within Auburn University, who desire to major in Interior Design, College of Human Sciences, will be admitted to Pre-Interior Design (INDX). The Pre-Interior Design students must complete the first year of Pre-Interior Design course work, i.e., CADS 1000 and CADS 1100 with a grade of "C" or better in order to be evaluated for possible admission into the Interior Design curriculum. Admission into the Interior Design program (sophomore-senior levels) is limited with a maximum class size of 36 students per year. Admission will be based upon a portfolio review by the Interior Design faculty of the work completed in the Pre-Interior Design course work. Students who have earned at least a C in both CADS 1000 and CADS 1100, but who are not selected for the Interior Design program because of class size limitations, may be invited to join the program if a space opens up in the program. Course work in the major must be taken in sequence; transfer students should anticipate that additional semesters of study may be required to complete the program.

Students in INDS must earn a grade of a C or higher in all prerequisite courses in the major before being allowed to proceed to the next course in the sequence. Major courses include the Human Sciences College core courses and all required Consumer and Design Sciences courses which are indicated in bold print in the model.

Major

- Apparel Merchandising, Design and Production Management (Apparel Merchandising Option) (p. 274)
- Apparel Merchandising, Design and Production Management (Product Design and Production Management Option) (p. 273)
- Consumer and Design Sciences, ABM
- Interior Design (p. 276)

Minor

- International Minor in Human Sciences (p. 277)
- Philanthropy and Nonprofit Studies (p. 278)

Consumer and Design Sciences, ABM

Apparel Merchandising, Design and Production Management (AMDP)

The accelerated BS/MS in Apparel Merchandising, Design and Production Management (AMDP) degree program will provide an opportunity for highly motivated and academically strong students to gain a depth of understanding of apparel merchandising, design, and product development beyond that of a typical bachelor's level graduates. It should make them more competitive in the job market or for additional graduate studies. The program will allow students to achieve a graduate degree in an accelerated period of time.

Students with at least 45 credit hours but no more than 96 and a 3.4 GPA will be eligible to apply for the program. Applications for the accelerated BS/MS in AMDP will consist of plans of study for both the Bachelor of Science in AMDP and the Master of Science in Consumer and Design Sciences. Applications will be due October 1 in the Fall of the Junior Year. Upon approval by the Undergraduate Program Coordinator, the Graduate Program Officer and the Department Chair, students will be admitted to the accelerated program and may register in the 6000-level courses at the appropriate time in their plan of study.

Students will matriculate in the accelerated program at an appropriate time as designated by the plan of study. This would begin in the spring of the junior year of their undergraduate program and continue until the last semester in the normal bachelor's degree program at which time the B.S. degree will be awarded. The Master of Science in Consumer and Design Sciences would be completed in May of the second year in the advanced degree program. On completion of the BS degree, students must apply to the Graduate School and be accepted into the MS program in the Department of Consumer and Design Sciences.

All undergraduate students enrolled in the program will be required to meet with the undergraduate program coordinator each semester before registering. Graduate students will have a major professor directing their thesis research. The Graduate Program Officer is available as needed.

Withdrawal Process: Student may withdraw voluntarily from the Accelerated program by notifying the Graduate Program Officer.

Select nine-ten hours of the following courses to meet the BS/MS requirements (minimum grade of B):

CADS 6450	History Of Costume	3
CADS 6460	Fashion Industry Since 1910	3
CADS 6600	Global Sourcing in Textiles and Apparel	3
CADS 6610	Global Retailing Strategies for Textile and Apparel Products	3
CADS 6750	Apparel Line Development	4
CADS 6760	Fashion Anlys And Forecasting	3
CADS 6850	Apparel Merchandising and Retail Management	4
CADS 6860	Advanced Retail Buying	3

Other requirementss for the M.S. in the Consumer and Design Sciences are listed in the [M.S. Consumer and Design Sciences](#).

Interior Design (INDS)

The accelerated BS/MS in Interior Design (INDS) degree program will provide an opportunity for highly motivated and academically strong students to gain a depth of understanding of Interior Design beyond that of a typical bachelor's level graduates. It should make

them more competitive in the job market or for additional graduate studies. The program will allow students to achieve a graduate degree in an accelerated period of time.

Students with at least 45 credit hours but no more than 96 and a 3.4 GPA will be eligible to apply for the program. Applications for the accelerated BS/MS in INDS will consist of plans of study for both the Bachelor of Science in INDS and the Master of Science in Consumer and Design Sciences. Applications will be due October 1 in the Fall of the Junior Year. Upon approval by the Undergraduate Program Coordinator, the Graduate Program Officer and the Department Chair, students will be admitted to the accelerated program and may register in the 6000-level courses at the appropriate time in their plan of study.

Students will matriculate in the accelerated program at an appropriate time as designated by the plan of study. This would begin in the fall of the senior year of their undergraduate program and continue until the last semester in the normal bachelor's degree program at which time the B.S. degree will be awarded. The Master of Science in Consumer and Design Sciences would be completed in May of the second year in the advanced degree program. On completion of the BS degree, students must apply to the Graduate School and be accepted into the MS program in the Department of Consumer and Design Sciences.

All undergraduate students enrolled in the program will be required to meet with the undergraduate program coordinator each semester before registering. Graduate students will have a major professor directing their thesis research. The Graduate Program Officer is available as needed.

Withdrawal Process: Student may withdraw voluntarily from the Accelerated program by notifying the Graduate Program Officer.

Courses to be used to meet BS/MS INDS requirement:

CADS 6300	Studio X: Hospitality Design	4
CADS 6400	Studio XI: Health Care Design	4

Other requirements for the M.S. in the Consumer and Design Sciences are listed in the [M.S. Consumer and Design Sciences](#).

Curriculum in Apparel Merchandising, Design and Production Management

Apparel Design and Production Management Option

Freshman

Fall	Hours	Spring	Hours
CADS 1600 Textile Industrial Complex	3	HDFS 2000 Marriage and Family in a Global Context	3
CADS 2000 Global Consumer Culture	3	CADS 1740 Aesthetics for Design	3
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1150 Pre-Calculus Algebra and Trigonometry	4	Core Social Sciences	3
COMP 1000 Personal Computer Applications	2	Core Fine Arts	3
	15		15

Sophomore

Fall	Hours	Spring	Hours
CADS 2740 Design Communication: CAD and Illustration	4	CADS 2750 Product Development: Technical Design	4
CADS 2800 Apparel Production Management	4	CHEM 1020 Survey of Chemistry II	3

CHEM 1010 Survey of Chemistry I	3	CHEM 1021 Survey of Chemistry II Laboratory	1
CHEM 1011 Survey of Chemistry I Laboratory	1	Core Literature	3
Core History	3	Core History or Core Social Science ¹	3
	15		14

Junior

Fall	Hours	Spring	Hours
CADS 3600 Textiles	4	CADS 3850 Merchandise Planning and Control	3
CADS 3750 Product Development: Apparel Design	4	CADS 5600 Global Sourcing in Textiles and Apparel	3
CADS 4500 Portfolio Development for Designers	4	NTRI 2000 Nutrition And Health	3
CADS 4800 Apparel Engineering	4	ECON 2020 Principles of Microeconomics	3
		Core Literature or Core Humanities ¹	3
	16		15

Senior

Fall	Hours	Spring	Hours	Summer	Hours
CADS 5760 Fashion Analysis And Forecasting	3	CADS 5750 Apparel Line Development	4	UNIV 4AA0 University Graduation	0
Professional Electives ²	3	CADS 5450 History Of Costume (or Prof. Elective) ²	3	CADS 4920 Internship	8
CADS 5460 Fashion Industry Since 1910 (or prof. elective) ²	3	Professional Electives ²	6		
Core Humanities ³	3				
	12		13		8

Total Hours: 123

¹ Must have a History sequence and one Literature course OR a Literature sequence and one History course.

² Must choose one CADS and one business related professional elective from the approved professional elective list. The Joseph S. Bruno Auburn Abroad in Italy program will satisfy (16) sixteen hours of professional electives.

³ Must choose from HONR 1007/HONR 1017, PHIL 1010/PHIL 1017, PHIL 1020/PHIL 1027, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090 or PHIL 1100.

Curriculum in Apparel Merchandising, Design and Production Management

Apparel Merchandising Option

Freshman

Fall	Hours Spring	Hours
CADS 1600 Textile Industrial Complex	3 NTRI 2000 Nutrition And Health	3
MATH 1150 Pre-Calculus Algebra and Trigonometry	4 Core Humanities ³	3
ENGL 1100 English Composition I	3 ENGL 1120 English Composition II	3
Core Social Science	3 COMP 1000 Personal Computer Applications	2
	Core Fine Arts	3
	13	14

Sophomore

Fall	Hours Spring	Hours
HDFS 2000 Marriage and Family in a Global Context	3 CADS 2760 Visual Merchandising	4
CHEM 1010 Survey of Chemistry I	3 CADS 2800 Apparel Production Management	4
CHEM 1011 Survey of Chemistry I Laboratory	1 CHEM 1020 Survey of Chemistry II	3
ACCT 2810 Fundamentals Of Accounting	3 CHEM 1021 Survey of Chemistry II Laboratory	1
CADS 2000 Global Consumer Culture	3 Select one of the following: ¹	3
Select one of the following: ¹	3 Core Literature	
Core History	Core Humanities	
Core Social Science		
	16	15

Junior

Fall	Hours Spring	Hours Summer	Hours
CADS 3600 Textiles	4 CAHS 3800 Consumer Decision Making for Apparel and Fashion Products	3 CADS 4920 Internship	8
STAT 2010 Statistics for Social and Behavior Sciences	4 CADS 5600 Global Sourcing in Textiles and Apparel	3	
CADS 3850 Merchandise Planning and Control	3 CADS 5850 Apparel Merchandising and Retail Management	4	
ECON 2020 Principles of Microeconomics	3 Core History	3	
	Core Literature	3	
	14	16	8

Senior

Fall	Hours Spring	Hours
CADS 5760 Fashion Analysis And Forecasting	3 CADS 5450 History Of Costume (OR professional electives) ²	3

CADS 5610 Global Retailing Strategies for Textile and Apparel Products or 5500 Professional Development: Merchandising Portfolio	3	MNGT 3810 Management Foundations	3
MKTG 3810 Foundations of Business Marketing	3	Professional Electives ²	6
CADS 5460 Fashion Industry Since 1910 (or prof. electives) ²	3	UNIV 4AA0 University Graduation	0
Professional Electives ²	3		
	15		12

Total Hours: 123

- ¹ Must have a History sequence and one Literature course OR a Literature sequence and one History course.
- ² Must choose one CADS and one business related professional elective from the approved professional elective list. The Joseph S. Bruno Auburn Abroad in Italy program will satisfy (16) sixteen hours of professional electives.
- ³ Must choose from HONR 1007/HONR 1017, PHIL 1010/PHIL 1017, PHIL 1020/PHIL 1027, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090 or PHIL 1100.

Curriculum in Interior Design

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1150 Pre-Calculus Algebra and Trigonometry	4	Core Science (CHEM or PHYS)	4
CADS 1000 Studio I: Introduction to Interior Design	4	Core History I	3
CADS 2000 Global Consumer Culture	3	CADS 1100 Studio II: Technical Design of Interior Design	4
	14		14

Sophomore

Fall	Hours	Spring	Hours
Core Social Science	3	HDFS 2000 Marriage and Family in a Global Context	3
Core Science (CHEM or PHYS)	4	CADS 2200 Studio IV Cad For Inds	4
CADS 2100 Studio III: Visual Presentation of Interior Design I	4	CADS 2400 Interior Materials and Components	3
CADS 2300 Hist Of The Decorative Arts	3	CADS 2500 Studio V: Visual Presentations II	4
	14		14

Junior

Fall	Hours	Spring	Hours
Core Fine Arts	3	ACCT 2810 Fundamentals Of Accounting	3

ECON 2020 Principles of Microeconomics	3	NTRI 2000 Nutrition And Health	3
CADS 3100 Studio VI: Lighting Design/Environmental Systems	4	CADS 3400 Studio VIII: Non-Residential Interiors	4
CADS 3200 Studio VII: Residential Interiors	4	CADS 3500 Business Practices in Interior Design	3
		Core Literature I	3
	14		16

Senior

Fall	Hours	Spring	Hours	Summer	Hours
Core Humanities ³	3	CADS 5400 Studio XI: Health Care Design	4	CADS 4920 Internship	8
MKTG 3810 Foundations of Business Marketing	3	Select one of the following:	3	UNIV 4AA0 University Graduation	0
CADS 5300 Studio X: Hospitality Design	4	Core Literature II			
Professional Electives ²	4	Core Humanities			
		Select one of the following:	3		
		Core History II ¹			
		Core Social Science			
		Professional Electives ²	6		
	14		16		8

Total Hours: 124

¹ Must have a History sequence and one Literature course OR a Literature sequence and one History course.

² Must choose one CADS and one business related professional elective from the approved professional elective list. The Joseph S. Bruno Auburn Abroad in Italy program will satisfy (10) ten hours of professional electives.

³ Must choose from HONR 1007/HONR 1017, PHIL 1010/PHIL 1017, PHIL 1020/PHIL 1027, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090 or PHIL 1100.

Note: Admission to the INDS program is competitive. All incoming and transfer students will be placed in Pre-Interior Design pending acceptance into the INDS program.

Prior to the beginning of the third semester, students must pass the placement test on the computer or take COMP 1000.

International Minor in Human Sciences

Required Courses

HUSC 5940	Study and Travel in Human Sciences	1-6
CADS 3380	Stud Abrd Opp In Human Sci	1

Human Sciences Core Requirements (Must complete 2 out of 3 courses) (If any course is required for major, you must complete all three courses.)

CADS 5600	Global Sourcing in Textiles and Apparel	3
NTRI 4580	Food and Culture	2
HDFS 4680	Family in Cross-Cultural Perspective	3

Foreign Language Requirement (Must have 8-9 hours in addition to any major or core foreign language requirement.)

16-19 semester hours in minor (minimum 9 hours at 3000-level or above)

Students must earn an overall 2.0 in the minor classes to receive the International Minor in Human Sciences.

Students may also complete the Joseph S. Bruno Auburn Abroad in Italy program to earn the International Minor in Human Sciences.

Philanthropy and Nonprofit Studies Minor

Required Courses

CADS 2700/2703	Introduction to Nonprofit Organizations	3
CADS 3700/3703/3707	Gender, Wealth and Philanthropy	3
CADS 4910	Practicum in Philanthropy and Nonprofit Organs	3
Total Hours		9

Disciplinary Support*

(Select a minimum of 6 hours from the list below. ** At least 3 hours must be at the 3000 level or above.)

CADS 2000/2007	Global Consumer Culture	3
CADS 3940	Study and Travel in Consumer Affairs	1-3
HDFS 3930	Service Learning in Human Development and Family Studies	1-6
HDFS 4500	Hospitalized Children and Their Families	3
HDFS 4670	Parent Education	3
HDFS 4680	Family in Cross-Cultural Perspective	3
HDFS 5300	Family and Social Policy	3
HUSC 2000/2007	Hunger: Causes, Consequences, and Responses	3
NTRI 3620	Community Nutrition	2
NTRI 3940	Community Service	3
HRMT 5460	Catering And Event Management	1
HRMT 5461	Catering and Event Management	2
ACCT 2810	Fundamentals Of Accounting	3

* If a student has taken this course to fulfill requirements of the School / College core or the major, it cannot count toward the minor. In this case, the student must select an additional three hour course from the electives above.

** Some of these course may have prerequisites that must be met.

Human Development and Family Studies

The Human Development and Family Studies (HDFS) undergraduate curriculum is designed to prepare students for a variety of careers that contribute to the success of individuals and families across the life span. Career directions include, but are not limited to, teaching and administering programs to young children in pre-school or hospital settings, counseling teens in residential treatment facilities or church programs, providing supportive services to adult and elderly populations, implementing family education in the broader community, and advocating for family policy within government settings. Students also gain excellent preparation for graduate school. Majors select one of seven concentration areas; Infancy/Preschool, Child Life, Middle Childhood/Adolescence, Adult Programs, Gerontology, Legislative/Public Policy, or Family Programming/Research. The capstone course for students is the undergraduate internship where classroom learning and real life come together to enhance professional competence. The HDFS curriculum draws upon the knowledge of many academic disciplines to promote understanding of current issues for individuals and families in modern society, and it is approved by the National Council on Family Relations to offer the Provisional Certified Family Life Education (CFLE) designation. The Department also operates the Marriage and Family Therapy Center, the Auburn University Early Learning Center as well as the Harris Early Learning Center in Birmingham, Alabama. Both early learning programs are accredited by the National Academy for Early Childhood Program Accreditation.

****Fingerprint/Criminal Background Checks are required of all HDFS majors. Students who do not obtain the required background check clearing letters will not be allowed to enroll in courses.****

Dual Objective Program: The Dual Objective Program with Human Development and Family Studies and the Early Childhood Education program in the College of Education is open to students in Human Development and Family Studies. Students completing this dual objective program earn the bachelor of science in the declared major from the College of Human Sciences and are eligible for an Alabama Class B teachers certification. Transferring into a teacher education program requires a minimum 2.5 GPA on all college coursework attempted and on all coursework attempted at Auburn.

Academic Standards and Policies: Students must earn a grade of C or better on all 3000 and 4000 level required HDFS major core to complete graduation requirements.

Major

- Human Development and Family Studies (p. 279)

Minor

- Human Development and Family Studies (p. 280)

Curriculum in Human Development and Family Studies

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History I ¹	3	MATH 1150 Pre-Calculus Algebra and Trigonometry	4
HDFS 2000 Marriage and Family in a Global Context	3	Select one of the following:	3
CADS 2000 Global Consumer Culture	3	Core History II ¹	
Core Humanities ²	3	Core Social Science ³	
		HDFS 2010 Lifespan Human Development in Family Context	3
		Professional Electives ⁵	3
	15		16

Sophomore

Fall	Hours	Spring	Hours
BIOL 1000 Introduction to Biology & BIOL 1001 Introduction to Biology Laboratory	4	BIOL 1010 A Survey of Life & BIOL 1011 A Survey of Life Laboratory	4
Core Literature I ¹	3	Select one of the following:	3
Core Fine Arts ⁴	3	Core Literature II ¹	
Core Social Science ³	3	Core Humanities ²	
NTRI 2000 Nutrition And Health	3	Core Social Science ³	3
		HDFS 2030 Professional Development and Ethics	3
		Professional Electives ⁵	3
	16		16

Junior

Fall	Hours Spring	Hours
Professional Electives ⁵	6 STAT 2010 Statistics for Social and Behavior Sciences	4
HDFS 3010 Child Development in the Family <i>or</i> 3030 Adolescent and Adult Development in the Family ⁵	3 Professional Electives ⁵	6
HDFS 3060 Patterns of Family Interaction <i>or</i> 4680 Family in Cross-Cultural Perspective ⁵	3 HDFS 3080 Development of Interpersonal Skills	3
Free Electives	3 Free Electives	2
	15	15

Senior

Fall	Hours Spring	Hours
Professional Electives ⁵	10 HDFS 4920 Internship in Human Development and Family Studies	12
Select one of the following: ⁵	3 <i>or</i> Joseph S. Bruno Auburn Abroad in Italy	
HDFS 5200 Program Development and Evaluation	UNIV 4AA0 University Graduation	0
HDFS 5300 Family and Social Policy		
HDFS 4950 Advanced Seminar		
Free Electives	2	
	15	12

Total Hours: 120

- ¹ Must have a History sequence and one Literature course OR a Literature sequence and one History course.
History options: HIST 1010 and HIST 1020 or HIST 1210 and HIST 1220
Literature options: ENGL 2200 and ENGL 2210 or ENGL 2230 and ENGL 2240 or ENGL 2250 and ENGL 2260
- ² Must choose from PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1080, PHIL 1090, PHIL 1100. Child Life must choose PHIL 1030.
- ³ Must choose from ANTH 1000, SOCY 1000, PSYC 2010
- ⁴ Fine Arts options: ARCH 2600, ARTS 1710, ARTS 1720, ARTS 1730, MUSI 2730, RTVF 2350, THEA 2010
- ⁵ Course selection based on choice of HDFS concentration.

Internship Handbook specifies professional electives for specific internship types.

(Applications for Internships must be completed 2 semesters in advance).

Human Development and Family Studies Minor

Required Courses

HDFS 2000	Marriage and Family in a Global Context	3
HDFS 2010	Lifespan Human Development in Family Context	3
Total Hours		6

Elective Courses

(Select a minimum of 12 hours from the list below; 9 hours must be at the 3000 level or higher.)

HDFS 2030	Professional Development and Ethics	3
HDFS 3010	Child Development in the Family *	3
HDFS 3030	Adolescent and Adult Development in the Family *	3
HDFS 3040	Human Sexuality Over the Family Life Cycle	3
HDFS 3060	Patterns of Family Interaction *	3
HDFS 3080	Development of Interpersonal Skills *	3
HDFS 3090	Techniques of Interviewing in Professional Settings	2
HDFS 3460	Effective Guidance and Interaction with Young Children	3
HDFS 3470	Learning Experiences for Young Children	3
HDFS 3930	Service Learning in Human Development and Family Studies	1-6
HDFS 5200	Program Development and Evaluation	3
HDFS 5300	Family and Social Policy	3
HDFS 4500	Hospitalized Children and Their Families	3
HDFS 4950	Advanced Seminar	3
HDFS 4670	Parent Education	3
HDFS 4680	Family in Cross-Cultural Perspective *	3
HDFS 4980	Advanced Undergraduate Research in Human Development and Family Studies	1-5

* Students must have a 2.25 cumulative GPA to enroll in HDFS 3010, 3060, 3080 and 4680. A "C" grade or better must be earned in each course taken toward the minor and each must be a HDFS course.

Note: Students must earn an overall 2.0 in the minor classes to receive the HDFS minor.

Note: If a student has take this course to fulfill requirements of the School / College core or the major, it cannot count toward the minor. In this case, the student must select an additional three hour course from the electives above.

Nutrition, Dietetics, and Hospitality Management

The Department offers two majors: Hotel and Restaurant Management (HRMT) and Nutrition (NTRI). The HRMT program emphasizes food and lodging services for consumers in the tourism industry. The NTRI major offers three options: Nutrition/Dietetics (NTDI), Nutrition Science (NSPM) and Nutrition/Wellness (NTWE).

Hotel and Restaurant Management

The HRMT major prepares students for careers in hotels, resorts, restaurant facilities and other positions in the tourism and hospitality industry and addresses the needs of the premium service segment of this industry. With its focus on instructional research and outreach initiatives, the HRMT program's mission is to educate exceptional leaders for the state of Alabama and global hospitality and tourism industries. We concentrate on service excellence, social and ethical responsibility, and diversity in a practically oriented and intellectually challenging learning environment.

Nutrition

The field of nutrition is concerned with human physiology and biochemistry and their relationship to human health, diet, and well-being. The NTRI curriculum has three options which permit specialization according to students' specific interests.

The Nutrition Science option prepares students for health professional schools, such as medical, dental, and physical therapy, as well as for graduate study in the nutrition discipline. The Nutrition Science option serves as a pre-med option.

The Nutrition/Dietetics option prepares students for careers in dietetics, nutrition education, and nutrition. The Didactic Program in Dietetics (DPD) is accredited by the Commission on Accreditation for Dietetic Education, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, 312-899-0040. Graduates who successfully complete the Nutrition/Dietetics option (DPD) are qualified to apply for a post-baccalaureate dietetic internship which is a requirement prior to taking the national examination to become a Registered Dietitian.

The Nutrition/Wellness option prepares students for careers in health-related settings. Graduates find positions in non-profit health organizations, hospital-based and corporate-based programs, and federal, state and local health agencies.

Course work in the major must be taken in sequence. On and off campus transfer students should anticipate that additional semesters of study may be required to complete the program.

Major

- Hotel and Restaurant Management (p. 283)
- Nutrition, ABM (p. 282)
- Nutrition (Nutrition/Dietetics Option) (p. 286)
- Nutrition (Nutrition Science Option) (p. 284)
- Nutrition (Nutrition Wellness Option) (p. 287)

Accelerated Bachelor's/Master's Program in Nutrition

Benefits of the Program

Earn 9 credits towards the Master's degree program in Nutrition during your senior year by taking graduate level versions of required undergraduate courses.

Admissions Qualifications

1. Grade Point Average of at least 3.4 (ungapped)
2. Minimum of 45 earned credit hours with at least 24 credit hours earned at Auburn University
3. Grade of B or higher in NTRI 4820 and in NTRI 4830

Application DEADLINE: On or before May 1

Sample Accelerated Progression for the Graduate Program

Senior

Fall	Hours	Spring	Hours
NTRI 6020 Medical Nutrition I	3	NTRI 6030 Medical Nutrition II	3
NTRI 6820 Nutrition In The Life Cycle	3	Schedule GRE test-date (needed Grad school application)	

Next year – upon admission to Graduate School – Sample Class Schedule:

Fall	Hours	Spring	Hours	Summer	Hours
NTRI 7530 Human Nutrient Metabolism	3	NTRI 7510 Vitamins	2	Elective (required for non-thesis program)	3
NTRI 7500 Minerals	2	NTRI 7520 Macronutrients Integr Metabo	4	NTRI 7980 Nonthesis Research or 7990 Research And Thesis	2
ERMA 7300 Design and Analysis in Education I	3	NTRI 7850 Research Seminar for Master's Program	1		
NTRI 7050 Methods Of Research	2	NTRI 7980 Nonthesis Research or 7990 Research And Thesis	2		
NTRI 7980 Nonthesis Research or 7990 Research And Thesis	1				

Note: The thesis option for the Master's degree program in nutrition requires 30 credit hours, and the non-thesis option for the Master's

degree program in nutrition requires 33 credit hours.

Admission into the ABM program in Nutrition does not guarantee admission into the Graduate program the following year. Admission into the Graduate Program requires an excellent academic record, satisfactory scores on the Graduate Record Examination (GRE), three letters of recommendation, and your applying to the Graduate School and admission to the Graduate program in Nutrition.

Curriculum in Hotel and Restaurant Management

Freshman

Fall	Hours	Spring	Hours
BIOL 1000 Introduction to Biology & BIOL 1001 Introduction to Biology Laboratory	4	BIOL 1010 A Survey of Life & BIOL 1011 A Survey of Life Laboratory	4
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History	3	Select one of the following:	3
PSYC 2010 Introduction to Psychology	3	Core History II ¹	
HRMT 1010 Introduction to Hospitality Management	2	Core Social Science	
		MATH 1150 Pre-Calculus Algebra and Trigonometry	4
		HRMT 2940 Professional Development in Hospitality	1
	15		15

Sophomore

Fall	Hours	Spring	Hours
ECON 2020 Principles of Microeconomics	3	ECON 2030 Principles of Macroeconomics	3
Core Literature I	3	Select one of the following:	3
ACCT 2810 Fundamentals Of Accounting	3	Core Literature II ¹	
CADS 2000 Global Consumer Culture	3	Core Humanities	
NTRI 2000 Nutrition And Health	3	ENVI 1020 Fundamentals of Environmental Science	2
HRMT 2500 Lodging Operations	2	PHIL 1040 Business Ethics	3
HRMT 2910 Hospitality Practicum	1	HRMT 2300 Hospitality Law	3
		HRMT 2400 Food Production in Hospitality	4
	18		18

Junior

Fall	Hours	Spring	Hours
FINC 3810 Foundations of Business Finance	3	MKTG 3810 Foundations of Business Marketing	3
MNGT 3810 Management Foundations	3	STAT 2010 Statistics for Social and Behavior Sciences	4
FLSP 1010 Elementary Spanish I	4	HRMT 3200 Hospitality Financial Management	3
HDFS 2000 Marriage and Family in a Global Context	3	HRMT 3800 Hospitality Information Technology	3
HRMT 4200 Hospitality Facilities Management	3	HRMT/NTRI Professional Elective ²	3
	16		16

Senior

Fall	Hours	Spring	Hours
HRMN 3420 Human Resource Management	3	Fine Arts Core	3
HRMT 3400 Hospitality Marketing	3	HRMT 4800 Senior Lecture Series	1
HRMT 4300 Food and Beverage Management	3	HRMT 4500 Strategic Hospitality Management	3
HRMT 4920 Internship In Hospitality	4	HRMT 5530 Science of Quality Service in Hospitality	3
		UNIV 4AA0 University Graduation	0
		HRMT/NTRI Professional Elective ²	3
	13		13

Total Hours: 124

¹ Must have a History sequence and one Literature course OR a Literature sequence and one History course.

² Select professional electives from approved professional elective list.

Professional Elective Courses

Courses listed below are approved courses that may be used to fulfill the Professional Elective requirements. Please note that the Catering and Event Management Class is a two semester class comprising of HRMT5460 (1 hour lecture) to be taken in the fall and HRMT5461 (2 hr laboratory) to be taken in the spring semester. You must take the course and the laboratory over two consecutive semesters. Please note that some courses are offered over the summer, but these classes are not guaranteed to be offered every summer. Please contact the Department of Nutrition, Dietetics and Hospitality Management for additional information.

HRMT 4600	Beverage Appreciation (Fall, Spring and Summer)	3
NTRI 5380	Study/Travel in Nutrition, Dietetics and Hospitality Management (Spring and Summer)	1-6
HRMT 5460	Catering And Event Management	1
HRMT 5461	Catering and Event Management	2
HRMT 5540	Conference Coordination (Fall and Summer)	3
HRMT 5550	Club Management (Spring)	3
HRMT 5570	Global Hospitality (Spring)	3

Curriculum in Nutrition (Nutrition Science Option)**Freshman**

Fall	Hours	Spring	Hours
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	Core History	3
SCMH 1890 Pre-Health Professions Orientation	1	NTRI 2000 Nutrition And Health	3
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
	16		17

Sophomore

Fall	Hours	Spring	Hours
Core Social Science	3	Select one of the following:	3
Core Literature I	3	Core History II ³	

BIOL 2500 Human Anatomy and Physiology I	4	Core Social Science	
CHEM 2070 Organic Chemistry I	3	BIOL 2510 Human Anatomy and Physiology II	4
CHEM 2071 Organic Chemistry I Laboratory	1	BIOL 3000 Genetics	4
Core Fine Arts	3	CHEM 2080 Organic Chemistry II	3
		CHEM 2081 Organic Chemistry II Laboratory	1
		NTRI 2070 Introduction to Dietetics and Nutrition	1
	17		16

Junior

Fall	Hours	Spring	Hours
BIOL 4100 Cell Biology		3 PHYS 1510 General Physics II	4
BIOL 4101 Cell Biology Laboratory		2 HDFS 2000 Marriage and Family in a Global Context	3
PHYS 1500 General Physics I		4 CADS 2000 Global Consumer Culture	3
BCHE 3180 Nutritional Biochemistry		3 NTRI 3720 Nutritional Assessment	2
BIOL 3200 General Microbiology		4 NTRI 4820 Macronutrients	3
		NTRI 4830 Vitamins And Minerals	3
	16		18

Senior

Fall	Hours	Spring	Hours
BIOL 4410 Vertebrate Development		5 PHIL 1030 Ethics and the Health Sciences	3
STAT 2510 Statistics for Biological and Health Sciences		3 PSYC 2010 Introduction to Psychology	3
NTRI 4090 Professional Issues in Dietetics and Nutrition		1 Select one of the following:	3
NTRI 5020 Medical Nutrition I		3 Core Literature II ¹	
NTRI 5820 Nutrition In The Life Cycle		3 Core Humanities	
		NTRI 5030 Medical Nutrition II	3
		UNIV 4AA0 University Graduation	0
		Elective	1
	15		13

Total Hours: 128

¹ Must have a History sequence and one Literature course OR a Literature sequence and one History course.

For Pre-Physical Therapy, substitute an additional psychology course for CHEM 2080 and CHEM 2081.

This option meets the requirements for the health and professional schools such as Medical School, Dental School and Physical Therapy School.

OPTIONAL FIFTH YEAR**Fifth Year**

Fall	Hours	Spring	Hours
ACCT 2810 Fundamentals Of Accounting		3 COUN 3100 Counseling and Human Services	3
ADED 4050 Methods of Teaching in Adult Education		3 ENGL 3040 Technical Writing	3

NTRI 2050 Science Of Food	4 NTRI 4410 Experimental Food Science	3
NTRI 3040 Food Systems Operations ¹	2 NTRI 5560 Nutrition and Food Service Management	4
NTRI 3041 Food Systems Operations Laboratory	2 UNIV 4AA0 University Graduation	0
NTRI 3620 Community Nutrition	2	
	16	13
Total Hours: 29		

¹ Prerequisite for NTRI 3040 (NTRI 2050) must be taken prior to fifth year.

Allows fulfillment of American Dietetic Association's academic requirements for Didactic Programs in dietetics. Graduates completing the fifth year are eligible to compete for internships.

Internships are required to be eligible to take national exam to become a Registered Dietitian.

Curriculum in Nutrition (Nutrition/Dietetics Option)

Freshman

Fall	Hours	Spring	Hours
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History	3	BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4
MATH 1150 Pre-Calculus Algebra and Trigonometry	4	NTRI 2000/2003 Nutrition And Health	3
PSYC 2010 Introduction to Psychology	3	Select one of the following	3
		Core History ¹	
		Core Social Science	
	17		17

Sophomore

Fall	Hours	Spring	Hours
Core Social Science	3	CHEM 2030 Survey of Organic Chemistry	3
BIOL 2500 Human Anatomy and Physiology I	4	BIOL 2510 Human Anatomy and Physiology II	4
NTRI 2050 Science Of Food	4	NTRI 2070 Introduction to Dietetics and Nutrition	1
Core Literature	3	CADS 2000 Global Consumer Culture	3
Fine Arts Core	3	Select one of the following:	3
		Core Literature ¹	
		Core Humanities	
	17		14

Junior

Fall	Hours	Spring	Hours
BIOL 3200 General Microbiology	4	NTRI 4820 Macronutrients	3
BCHE 3180 Nutritional Biochemistry	3	NTRI 4830 Vitamins And Minerals	3
NTRI 3040 Food Systems Operations	2	NTRI 3760 Nutrition Counseling	2

NTRI 3041 Food Systems Operations Laboratory	2	NTRI 5010 Medical Nutrition Assessment	2
ENGL 3040 Technical Writing	3	STAT 2510 Statistics for Biological and Health Sciences	3
PHIL 1030 Ethics and the Health Sciences	3		
	17		13

Senior

Fall	Hours	Spring	Hours
NTRI 4090 Professional Issues in Dietetics and Nutrition		1 NTRI 4410 Experimental Food Science	3
NTRI 5020 Medical Nutrition I		3 NTRI 3750 Nutrition Education	2
NTRI 5820 Nutrition In The Life Cycle		3 NTRI 5030 Medical Nutrition II	3
NTRI 4620 Public Health Nutrition		3 NTRI 5560 Nutrition and Food Service Management	4
NTRI 5830 Nutritional Genomics		3 NTRI 5910 Clinical Practicum in Dietetics	1
HDFS 2000 Marriage and Family in a Global Context		3 UNIV 4AA0 University Graduation	0
	16		13

Total Hours: 124

¹ Must have a History sequence and one Literature course OR a Literature sequence and one History course.

The Accreditation Council for Education in Nutrition and Dietetics' academic requirements for Didactic Program in Dietetics will be met by the Nutrition/Dietetics option. Graduates choosing this option must complete an internship after graduation to be eligible to take the national exam for Registered Dietitians. Acceptance into dietetic internships is highly competitive.

Curriculum in Nutrition (Wellness Option)

Freshman

Fall	Hours	Spring	Hours
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
ENGL 1100 English Composition I	3	BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4
MATH 1150 Pre-Calculus Algebra and Trigonometry	4	ENGL 1120 English Composition II	3
PSYC 2010 Introduction to Psychology	3	NTRI 2000/2003 Nutrition And Health	3
Core History I ¹	3	Select one of the following	3
		Core History II ¹	
		Core Social Science ²	
	17		17

Sophomore

Fall	Hours	Spring	Hours
BIOL 2500 Human Anatomy and Physiology I	4	BIOL 2510 Human Anatomy and Physiology II	4
NTRI 2050 Science Of Food	4	CHEM 2030 Survey of Organic Chemistry	3

Fine Arts Core ³	3 NTRI 2070 Introduction to Dietetics and Nutrition	1
Literature Core ⁴	3 CADS 2000 Global Consumer Culture	3
Social Science Core ²	3 Select one of the following	3
	History core ¹	
	Literature core ⁴	
	17	14

Junior

Fall	Hours Spring	Hours
BCHE 3180 Nutritional Biochemistry	3 ENGL 3040 Technical Writing	3
NTRI 3750 Nutrition Education	2 KINE 1100/1103 Wellness	2
NTRI 2010 Basic Sports Nutrition	3 NTRI 4820 Macronutrients	3
PHIL 1030 Ethics and the Health Sciences	3 NTRI 4830 Vitamins And Minerals	3
Free Electives	2 STAT 2510 Statistics for Biological and Health Sciences	3
	Professional Electives ⁶	2
	13	16

Senior

Fall	Hours Spring	Hours
HDFS 2000 Marriage and Family in a Global Context	3 NTRI 5100 Nutrition in Disease Prevention	2
NTRI 4620 Public Health Nutrition	3 Free Electives	3
NTRI 5820 Nutrition In The Life Cycle	3 Professional Electives ⁶	9
Professional Electives ⁶	6 UNIV 4AA0 ⁷	0
	15	14

Total Hours: 123

¹ Must have a History sequence and one Literature course OR a Literature sequence and one History course. History options: HIST 1010, HIST 1020, HIST 1210, HIST 1220.

² Social Science options: ANTH 1000, GEOG 1010, POLI 1050, POLI 1090, SOCY 1000, UNIV 2710, UNIV 2720.

³ Fine Arts options: ARCH 2600, ARTS 1710, ARTS 1720, ARTS 1730, MUSI 2730, RTVF 2350, THEA 2010.

⁴ Literature options: ENGL 2200, ENGL 2210, ENGL 2230, ENGL 2240, ENGL 2250, ENGL 2260.

⁵ Humanities options: UNIV 2710, FLGC 1150, COMM 1000, PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090, PHIL 1100.

⁶ Professional electives options: NTRI 3040, NTRI 4410, NTRI 5560, HRMT 1010, COMP 1000, KINE 3400, KINE 3680, KINE 4450, COMM 1000, COMM 2010, COMM 2410, COMM 3100, COMM 3110, COMM 3450, COMM 3500, JRNL 1100, JRNL 2210, JRNL 3220, HDFS 2010. Courses from Business minor, Hunger minor, Joseph S. Bruno Auburn Abroad in Italy, PYSC, COUN, Foreign Language Undergraduate Research. Department head approval.

⁷ Seniors must register for UNIV 4AA0HS1 the term they plan to graduate (non-credit class number for clearing graduation check).

*** **NOTE:** Required major courses and College core courses are in **bold**. Grades in these courses are used to calculate the GPA in the major and to meet graduation standards.

Majors

Minors

Hunger Studies Minor

Required Courses

HUSC 2000	Hunger: Causes, Consequences, and Responses	3
HUSC 4000	Hunger Studies Capstone	3
Total Hours		6

Knowledge

(Select a minimum of 12 hours from the lists below; 9 hours must be at the 3000 level or higher.)

NTRI 2000/2003	Nutrition And Health	3
NTRI 2050	Science Of Food	4
AGRN 1000	Basic Crop Science	4
ANSC 1000	Introduction to Animal Sciences	4
FISH 5210	Principles of Aquaculture	3
FORY 5440	International Forestry	3
HORT 2050	Food for Thought	3
ANSC 2010	Animals and Society	3
NTRI 3620	Community Nutrition	2
RSOC 3190	Agriculture and Society	3

Leadership and Advocacy

(must select one course)

AGRI 3800	Agricultural Leadership Development	2
COMM 3450	Intercultural Communication	3
HDFS 5300	Family and Social Policy	3
PHIL 3100	Intermediate Ethics	3
RSOC 4410	Extension Programs and Methods	3
RSOC 5640	Sociology of Community Development	3

Global Citizenship

(must select one course)

CADS 2000	Global Consumer Culture	3
NTRI 3940	Community Service	3
NTRI 4580	Food and Culture	2
HDFS 4680	Family in Cross-Cultural Perspective	3
GEOG 2010	Cultural Geography	3
GEOG 5350	Economic Geography	3
ANTH 3000	Culture, Marriage and the Family	3
POLI 3090	Introduction to International Relations	3
POLI 3100	Introduction to World Affairs	3
POLI 4700	Politics of International Economic Relations	3

PSYC 3550	Psychology and Culture	3
ECON 4300	International Economics	3

College of Liberal Arts

ANNE-KATRIN GRAMBERG, *Dean*

PAULA BOBROWSKI, *Associate Dean for Research and Faculty Development and Graduate Studies*

DAN LaROCQUE, *Associate Dean for Academic Affairs*

GIOVANNA SUMMERFIELD, *Associate Dean for Educational Affairs*

Majors in Liberal Arts prepare students for immediate employment after receiving undergraduate degrees, for example, as journalists, public relations experts, archivists, interpreter/translators, curators, social scientists, counselors, fine arts and entertainment industry professionals, education support specialists, management professionals, or technical communicators. Students also receive strong academic backgrounds for graduate study or professional education. The College of Liberal Arts consists of four academic areas, each of which is divided further into departments:

- Humanities: English, Foreign Language, History, and Philosophy, awarding Bachelor of Arts degrees.
- Fine Arts: Art, Music, and Theatre, awarding Bachelor of Arts, Bachelor of Music, and Bachelor of Fine Arts degrees.
- Communication: Communication Disorders and Communication and Journalism, awarding Bachelor of Arts and Bachelor of Science degrees.
- Behavioral and Social Sciences: Economics, Political Science, Psychology, and Sociology, Anthropology, and Social Work, awarding Bachelor of Arts and Bachelor of Science degrees.

Becoming a Liberal Arts Major

Undeclared or Pre-Majors. Beginning with the first-year class admitted for fall semester 2009, the College of Liberal Arts requires most students entering the college with fewer than 12 completed college credit hours to enter the college as either an undeclared student (PLAU) or a pre-major. This requirement does not apply to Honors College students or students admitted into the Departments of Art or Theatre.

Entering a Major: After the completion of 12 credit hours at Auburn, students may then transfer into a major in the College of Liberal Arts, provided they meet the entrance criteria for the selected major. Some majors have no admission requirements beyond 12 credit hours, but others have additional admission requirements. Students should contact the department that houses their intended major to determine specific entrance requirements.

Declaring a Major: All students must declare a major by the end of the semester in which they complete 45 semester hours of credit, including transfer and other college credit. Students transferring into the College of Liberal Arts with 45 or more semester hours' credit must declare a major upon admission. Before a major is declared, students will follow the requirements for the College of Liberal Arts and will be identified as pre-majors in a curriculum or by the designation PLAU for undeclared students.

Required Courses for All Liberal Arts Majors

Most majors in the College of Liberal Arts require students to complete a one-year sequence in a foreign language. Students are placed into each sequence based on results of a placement exam administered by the Department of Foreign Languages and Literatures prior to their enrollment at Auburn. Students pursuing BFA degrees in Art and Theatre are exempted from the foreign language sequence requirement.

Policies for Dual Degrees and Double Majors

To earn a second baccalaureate degree, students must complete a separate body of knowledge appropriate for the degree. The Dean's Office in the College of Liberal Arts determines when it is possible for students to earn a second baccalaureate degree. Auburn University academic policy stipulates the minimum hours necessary in addition to the primary degree or curriculum. The College of Liberal Arts requires that, at a minimum, 30 additional hours of non-overlapping course work must be accomplished in the second baccalaureate degree program.

To earn a double major, students must complete all the major courses in both majors. Of these major courses, at least 20 hours of each major must be unique, rather than being used as major, support, or core courses in both majors. If at least 20 hours of unique courses do not exist for each of the two majors, students cannot pursue a double major.

For complete information on dual degrees and double major requirements, please see the Academic Policies (<https://bulletin.auburn.edu/generalinformation/academicpolicies>) section.

Special Academic Opportunities

To augment the learning experiences available through majors in the College of Liberal Arts, students can take advantage of the following possibilities:

- *Dual Degrees with the College of Engineering.* Students can receive a degree from a Liberal Arts major and a degree from a major in the Samuel Ginn College of Engineering. To ensure that all requirements are met, students should see advisors in both colleges. Typically, five to six academic years are necessary to complete dual degrees.
- *Pre-Law Study.* Most majors in Liberal Arts are accepted as preparation for the study of law. However, students should consult with the pre-law advisor in Haley Center 8030 E in preparing for law school admission and the study of law. The pre-law advisor will suggest the most useful courses to take.
- *Pre-Health Study.* Most majors in Liberal Arts are accepted as preparation for professional degrees in health, including medicine, dentistry, optometry, physical therapy, and occupational therapy. Generally, students will need to take particular courses in science, mathematics, and philosophy as their university core requirements. They will also need to take additional courses in science and mathematics not required by most Liberal Arts majors and attend a Pre-Health Professional Orientation course offered during fall semester. To ensure they complete the necessary requirements and to get assistance in applying to graduate or professional programs in health fields, students should meet with the pre-health advisors in the College of Science and Mathematics. Students should also consult with advisors in the College of Liberal Arts and in the departments that house their majors.
- *Teacher Certification through the College of Education.* Students holding baccalaureate degrees in English or a foreign language may gain teaching certification through enrolling in the Alternative Master's Certification Program in the College of Education. Upon successful completion of the program, students are awarded a master's degree in education (MEd), and they will be eligible to apply for Alabama Class A certification (master's level certificate).
- *University Honors College.* Students with extraordinarily high academic aptitude can receive individual learning opportunities through the Honors College. For more information, see the "Academics Policies" section.
- *Study Abroad.* Students can gain course credit as well as visit interesting places through Study Abroad programs. For more information, students can contact the Office of International Programs or the departments that house these Study Abroad opportunities.
- *Cooperative Education Programs.* Students receive opportunities to integrate classroom education with work experience in Cooperative Education Programs. Students alternate each semester between attending classes and working for companies. Cooperative Education Programs are available in the Departments of Art, English (Professional Writing and Public Writing track), Political Science (Health Services Administration and Public Administration majors) Psychology, and Sociology, Anthropology, and Social Work. Interested students should contact the director of the Cooperative Education Program.
- *The Caroline Marshall Draughon Center for the Arts and Humanities.* Students may be interested in the programs and other activities sponsored through the Caroline Marshall Draughon Center for the Arts and Humanities. As described on its website, the mission of the Center is "to strengthen the bonds between the College of Liberal Arts and the public by creating and implementing arts and humanities programs that explore our individual and collective experiences, values, and identities through the past, in the present, and for the future. The Center also creates occasions and space for dialogue, intellectual community, and cross-disciplinary scholarship."

Undergraduate Degrees

The College of Liberal Arts and the School of Fine arts offer academic majors, programs, and options in more than 30 fields. These are listed below.

Graduate Degrees

Doctor of Philosophy degrees are offered in English, History, Psychology, and Public Administration and Public Policy, and a PhD track is offered in Applied Economics. The Doctor of Audiology degree is offered in Communication Disorders. Master of Arts degrees are offered in English, Spanish, History, Political Science, Sociology, and Communication. Master of Science degrees are offered in Communication Disorders, Economics, and Psychology. The degrees of Master of Communication Disorders, Master of Hispanic Studies, Master of Public Administration, and Master of Technical and Professional Communication are also offered. These degree programs are described in the Graduate School section.

Majors

- Anthropology (p. 344)
- Art (p. 295)
- Art History (p. 296)
- Art-Studio/Fine Arts (p. 297)
- Communication (p. 300)
- Communication Disorders (p. 306)
- Economics - Primary Track (p. 308)
- Economics - Quantitative Track (p. 309)
- English - Creative Writing (p. 311)
- English - Professional Writing and Literacy Studies (p. 314)
- English - Literature (p. 312)
- French (p. 317)
- French International Trade (p. 319)
- German (p. 320)
- German International Trade (p. 321)
- Health Services Administration (p. 337)
- History (p. 326)
- Journalism (p. 301)
- Music (p. 328)
- Music Performance - Instrumental (p. 329)
- Music Performance - Piano (p. 331)
- Music Performance - Voice (p. 332)
- Music Theatre (p. 353)
- Philosophy (p. 335)
- Political Science (p. 339)
- Public Administration (p. 340)
- Public Relations (p. 302)
- Psychology (p. 342)
- Radio Television and Film (p. 303)
- Spanish (p. 322)
- Spanish International Trade (p. 323)
- Social Work (p. 345)
- Sociology (p. 347)
- Theatre (p. 349)
- Theatre - Design / Technology (p. 350)
- Theatre - Management (p. 352)
- Theatre - Music Theatre (p. 353)
- Theatre - Performance (p. 354)

Minors

- Africana Studies (https://bulletin.auburn.edu/undergraduate/collegeofliberalarts/africanastudies_minor)
- Asian Studies (p. 317)
- Anthropology (p. 344)
- Art History (p. 295)
- Community and Civic Engagement (https://bulletin.auburn.edu/undergraduate/collegeofliberalarts/civicengagement_minor)
- Classics (p. 317)

- Communication (p. 300)
- Dance (p. 356)
- Economics (p. 311)
- English (p. 315)
- English - Creative Writing (p. 315)
- English - Technical Professional Communication (p. 316)
- French (p. 324)
- German (p. 324)
- Global Cultures (p. 324)
- History (p. 327)
- Italian Studies (p. 325)
- Journalism (p. 304)
- Latin American Studies (p. 325)
- Linguistics (p. 316)
- Medieval and Renaissance Early Modern Studies (p. 316)
- Music (p. 333)
- Philosophy (p. 336)
- Political Science (p. 341)
- Psychology (p. 343)
- Public Administration (p. 341)
- Religious Studies (p. 336)
- Social Work (p. 348)
- Sociology (p. 348)
- Spanish (p. 325)
- Studio Art (p. 299)
- Theatre (p. 356)
- Women's Studies (p. 356)

Program

- Audiology Program - AuD (p. 484)
- Communication - MA, Graduate Certificate (p. 492)
- Communication Disorders - MCD, MS (p. 494)
- Economics - MS (p. 501)
- Economics - PhD Track (p. 502)
- English - MS, MTPC, PhD, Graduate Certificate (p. 506)
- History - MA, PhD, Graduate Certificates (p. 515)
- Psychology - MS, PhD (p. 535)
- Public Administration and Public Policy - MPA, PhD, Graduate Certificates (p. 538)
- Sociology - MS, MA (p. 544)
- Spanish - MA, MHS (p. 546)

Graduate Degrees

Doctor of Philosophy degrees are offered in Economics, English, History, Psychology, and Public Administration and Public Policy. Master of Arts degrees are offered in English, Spanish, History, Political Science, Sociology and Communication. Master of Science degrees are offered in Communication Disorders, Economics, and Psychology. The Doctor of Audiology degree is offered in Communication Disorders.

The degrees of Master of Communication Disorders, Master of Hispanic Studies, Master of Public Administration, and Master of Technical and Professional Communication are offered. Degree programs are described in the Graduate School section.

Graduate Minors

The College of Liberal Arts houses the Women's Studies Program, which offers a graduate minor in Women's Studies. For more information about this minor, please select the link below.

- Women's Studies (p. 551)

Faculty in the Departments of Economics and Political Science participate in the graduate minor in Economic Development, which is administered by the Economic and Community Development Institute.

- Economic Development (p. 549)

Art

The Department of Art prepares students for careers as artists and for careers in visual arts institutions. The Department of Art is an accredited member of the National Association of Schools of Art and Design and a member of the College Art Association.

The Department of Art offers three majors: a Bachelor of Arts in Art History, a Bachelor of Arts in Studio Art, and a Bachelor of Fine Arts in Studio Arts. The BA in Art History is for students who want an art history education within the liberal arts curriculum. Students elect art history courses in four groups and complete a capstone project in methodology and history. Students in this major have great flexibility in their choice of electives, enabling them to access a broad array of courses within the university. The BA in Art is for students who want a studio art education within the liberal arts tradition. Students elect studio courses in several areas rather than a single concentration. The BFA in Studio Art is a professional degree that allows students to concentrate in one area: painting, sculpture, printmaking, or ceramics. The Department of Art also offers an Art History minor.

Students must comply with these requirements to be admitted to the BFA in Studio Art:

- Students must apply for admission.
- They must have completed 24 credit hours of studio art and art history courses. They should check with the department for a list of courses.
- They must submit a written statement of academic and career goals.
- They must present a portfolio of artwork.
- They must participate in an evaluative meeting with a designated Department of Art faculty member.

In all Fine Arts curricula, electives may include six hours Basic ROTC or Advanced ROTC. In curricula that do not allow for six hours of electives, ROTC may be taken in lieu of required courses with approval of the departmental adviser. University core courses may not be replaced by Basic or Advanced ROTC.

- Art (p. 295)
- Art History (p. 296)
- Art-Studio / Fine Arts (p. 297)

Minor

- Art History (p. 295)
- Studio Art (p. 299)
- Women's Studies (p. 356)

Art History Minor

ARTS 1710	Introduction to Art History I	3
ARTS 1720	Introduction to Art History II	3
ARTS 1730	Introduction to Art History III	3
Elective Courses - See advisor for approved course listing.		9
Total Hours		18

¹ Minimum 9 hours at 3000-level or above

BA Curriculum in Art

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History ¹	3	Core Social Science or Core History to complete the sequence ¹	3
Select one of the following:	3	ARTS 1120 Drawing II	3
ARTS 1510 Looking at Art: Approaches to Interpretation (Core Fine Arts)		ARTS 1210 2-D Design for Studio Art	3
ARCH 2600 The Art of Architecture, Place, and Culture (Core Fine Arts)		ARTS 1720 Introduction to Art History II	3
MUSI 2730/2737 Appreciation of Music (Core Fine Arts)			
RTVF 2350 Introduction to Film Studies (Core Fine Arts)			
THEA 2010/2017 Introduction to Theatre (Core Fine Arts)			
ARTS 1110 Drawing I	3		
ARTS 1710 Introduction to Art History I	3		
	15		15

Sophomore

Fall	Hours	Spring	Hours
Core Literature ¹	3	Foreign Language II (College Core)	4
Foreign Language I (College Core)	4	Core Science II	4
Core Science I	4	Select one of the following:	3
ARTS 1220 3-D Design for Studio Art	3	ARTS 2510 Introduction to Sculpture (3D Area)	
ARTS 1730 Introduction to Art History III	3	ARTS 2810 Ceramics I (3D Area)	
		ARTS 3820 Ceramics II (3D Area)	
		ARTS 2110 Figure Drawing	3
	17		14

Junior

Fall	Hours	Spring	Hours
Core Humanities (except COMM 1000) or Core Literature to complete sequence ¹		3 Core Mathematics	3
Core Social Science		3 Core Social Science	3
Select one of the following:		3 2000-level Studio course ²	3
ARTS 2210 Introduction to Photography (2D Area)		2000/3000-level Studio course ²	3
ARTS 2310 Painting I (2D Area)		Elective	3
ARTS 2410 Printmaking: Relief (2D Area)			
3000-level Art History course ²	3		
Elective	3		
	15		15

Senior

Fall	Hours	Spring	Hours
PHIL 1070 Art, Value, and Society	3	3000/4000-level Studio course ²	3
3000-level Art History course ²	3	ARTS 4850 Professional Studio Practices ³	2
3000/4000-level Studio course ²	3	Electives	9
Electives	6	UNIV 4AA0 University Graduation	0
	15		14

Total Hours: 120

¹ Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or Core Literature in the discipline not selected as the sequence.

² Students must meet with their advisors for a list of approved courses.

³ ARTS 4850 fulfills SLO 7.

BA Curriculum in Art History

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History ¹	3	Core Social Science or Core History to complete sequence ¹	3
Select one of the following:		3 ARTS 1120 Drawing II	3
ARTS 1510 Looking at Art: Approaches to Interpretation (Core Fine Arts)		ARTS 1210 2-D Design for Studio Art	3
ARCH 2600 The Art of Architecture, Place, and Culture (Core Fine Arts)		ARTS 1720 Introduction to Art History II	3
MUSI 2730/2737 Appreciation of Music (Core Fine Arts)			
RTVF 2350 Introduction to Film Studies (Core Fine Arts)			

THEA 2010/2017 Introduction to Theatre (Core
Fine Arts)

ARTS 1110 Drawing I	3	
ARTS 1710 Introduction to Art History I	3	
	15	15

Sophomore

Fall	Hours	Spring	Hours
Core Foreign Language I (College Core)	4	Core Literature ¹	3
Core Science I	4	Foreign Language II (College Core)	4
ARTS 1220 3-D Design for Studio Art	3	Core Science II	4
ARTS 1730 Introduction to Art History III	3	Elective	2
		3000-level Art History course ²	3
	14		16

Junior

Fall	Hours	Spring	Hours
Core Humanities (except COMM 1000) or Core Literature to complete sequence ¹	3	Core Mathematics	3
Core Social Science	3	Core Social Science	3
3000-level Art History courses ²	6	3000-level Art History courses ²	6
Elective	3	Elective	3
	15		15

Senior

Fall	Hours	Spring	Hours
Approved Humanities Choice ³	3	3000-level Art History course ²	3
3000-level Art History courses ²	6	ARTS 4700 Senior Capstone: Art History	3
Electives	6	Electives	9
		UNIV 4AA0 University Graduation	0
	15		15

Total Hours: 120

- ¹ Students are required to complete a two-course history sequence or literature sequence. They are also required to complete one Core History or Core Literature in the discipline not selected as the sequence.
- ² Students must meet with their advisers to identify approved 3000-level Art History courses.
- ³ One Core Humanities choice must cover SLO 3.
- ⁴ Capstone in Art History fulfills SLO 7.

BFA Curriculum in Art-Studio/Fine Arts

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	Core History ¹	3
Select one of the following:	3	ENGL 1120 English Composition II	3

ARCH 2600 The Art of Architecture, Place, and Culture (Core Fine Arts)	ARTS 1120 Drawing II	3
ARTS 1510 Looking at Art: Approaches to Interpretation (Core Fine Arts)	ARTS 1220 3-D Design for Studio Art	3
MUSI 2730/2737 Appreciation of Music (Core Fine Arts)	ARTS 1720 Introduction to Art History II	3
RTVF 2350 Introduction to Film Studies (Core Fine Arts)		
THEA 2010/2017 Introduction to Theatre (Core Fine Arts)		
ARTS 1110 Drawing I	3	
ARTS 1210 2-D Design for Studio Art	3	
ARTS 1710 Introduction to Art History I	3	
	15	15
Sophomore		
Fall	Hours Spring	Hours
Core Literature ¹	3 PHIL 1070 Art, Value, and Society	3
Elective	3 ARTS 2140 Advanced Drawing I	3
ARTS 1730 Introduction to Art History III	3 2-D Studio courses ²	3
ARTS 2110 Figure Drawing	3 ARTS 2810 Ceramics I or 3820 Ceramics II	3
2-D Studio course ²	3 2000/3000-level course in Concentration ²	3
ARTS 2510 Introduction to Sculpture	3	
	18	15
Junior		
Fall	Hours Spring	Hours
Core Humanities (except COMM 1000) or Core Literature to complete sequence ¹	3 Core Science II	4
Core Science I	4 ARTS 2610 Introduction to Digital Art	3
2000/3000/4000-level Fine Art Studio course ²	3 3000-level Art History course ²	3
3000/4000-level course in Concentration ²	3 3000/4000-level course in Concentration ²	3
3000/4000-level Fine Art Studio course ²	3 3000/4000-level Fine Art Studio course ²	3
	16	16
Senior		
Fall	Hours Spring	Hours
Core Social Science	3 Core Social Science	3
Core Social Science or Core History to complete sequence ¹	3 ARTS 3800 Issues and Criticism Contemporary Art	3
Core Math	3 ARTS 4850 Professional Studio Practices ³	2
3000/4000-level ARTS course ²	3 ARTS 4980 Senior Project for Studio Arts ³	4
3000/4000-level Studio or Art History course ²	4 3000/4000-level Fine Art Studio ²	3

UNIV 4AA0 University Graduation 0

16 15

Total Hours: 126

- ¹ Students are required to complete a two-course history sequence or literature sequence. They are also required to complete one Core History or Core Literature in the discipline not selected as the sequence.
- ² Students must meet with their advisors for a list of approved courses.
- ³ ARTS 4850 fulfills SLO 7.

Studio Art Minor

ARTS 1110	Drawing I	3
ARTS 1210	2-D Design for Studio Art	3
or ARTS 1220	3-D Design for Studio Art	
2000-level Studio Art course ¹		3
3000-level Studio Art course		3
3000-level Studio Art course		3
3/4000-level Studio Art course		3
Total Hours ²		18

- ¹ Elective Courses — See advisor for approved course listings.
- ² Students must earn a C and maintain a 2.5 grade-point average in all courses that count toward the minor.

Communication & Journalism

Majors from the Department of Communication and Journalism have found jobs as public relations specialists, website authors, news professionals, and even programmers and anchors for television. The department offers undergraduate degree programs in Communication, Journalism, Public Relations, and Radio/Television/Film. These programs offer students opportunities to create and understand the transmission and reception of messages within specific contexts.

Students must comply with these requirements to be admitted to any of the four majors in the Department of Communication & Journalism:

- Students must apply for admission to the major.
- They must have completed 30 hours of course work, including the university core courses or equivalents.
- They must earn a minimum 2.3 GPA in ENGL 1100, ENGL 1120, and the university-required core social science courses.
- Students transferring in to Auburn must take a minimum of 21 credit hours at Auburn.
- Students must submit a 300-word statement explaining their interest in their chosen field and their career goals.
- They should check with the department chair or program coordinator for further information about entry requirements.

These are further admission requirements:

- Students who want to major in Communication or in Radio/Television/Film must have completed COMM 1000 with a B or better.
- Students who want to major in Journalism or in Public Relations must have completed JRNL 1100 with a B or better.

Major

- Communication (p. 300)
- Journalism (p. 301)

- Public Relations (p. 302)
- Radio Television and Film (p. 303)

Minor

- Communication (p. 300)
- Journalism (p. 304)

Communication Minor

CMJN 2100	Concepts in Communications and Journalism	3
Select two of the following:		6
COMM 3500	Foundations of Human Communication	
COMM 3600	Foundations of Rhetoric and Social Influence	
RTVF 3300	Foundation of Mass Communication	
Additional hours of 3000-4000-level courses in COMM, PRCM, or RTVF.		9
Total Hours		18

¹ Minimum 9 hours at 3000-level or above

See advisor for approved listing of elective an area courses. Minor requires 9 hours of founations coursework and 9 hours of emphasis in one area. Students must meet prerequisites for all courses.

Curriculum in Communication

Students must apply for admission to the COMM major. All applicants must have completed 30 hours of course work (including the university core or its equivalents), COMM 1000 with a B or better and earn a minimum 2.3 GPA in ENGL 1100, ENGL 1120, and Social Science Group 1. See the department chair or program coordinator for further information. Students who transfer to Auburn University's COMM major are required to take a minimum of 21 credit hours in the AU Program.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Foreign Language I (College Core)	4	Foreign Language II (College Core)	4
Core History	3	Core Social Science	3
COMM 1000 Public Speaking ¹	3	Core Mathematics	3
Core Social Science	3	Elective	3
	16		16

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Core History to complete sequence	3
Core Science I	4	Core Science II	4
Approved Humanities Choice ²	3	Core Fine Arts	3
CMJN 2100 Concepts in Communications and Journalism	3	Course from Group 1 ³	3
Elective	2	Course for Supporting Area ⁴	3
	15		16

Junior

Fall	Hours	Spring	Hours
COMM 3500 Foundations of Human Communication	3	COMM 3600 Foundations of Rhetoric and Social Influence	3
Courses from Group 2 ³	6	Courses from Group 2 ³	6
Course for Supporting Area ⁴	3	Course for Supporting Area ⁴	3
Elective	3	Elective	3
	15		15

Senior

Fall	Hours	Spring	Hours
Courses from Group 3 ³	6	Courses from Group 3 ³	6
Course from Group 4 ³	3	COMM 4920 Internship ⁵	3-6
Course for Supporting Area ⁴	3	Course for Supporting Area ⁴	3
COMM Elective	3	UNIV 4AA0 University Graduation	0
	15		12-15

Total Hours: 120-123

- ¹ COMM 1000 fulfills SLO 7.
- ² One Core Humanities must cover SLO 3.
- ³ Students must see their advisers for approved course listings for Groups 1, 2, 3, and 4.
- ⁴ Students must see their advisers for approved Supporting Area courses.
- ⁵ The internship may be taken part time for 3 credit hours or full time for 6 credit hours.

Curriculum in Journalism

Students must apply for admission to the JRNL major. All applicants must have completed 30 hours of course work (including the university core or its equivalents), JRNL 1100 with a B or better and earn a minimum 2.3 GPA in ENGL 1100, and Core Social Science. See the department chair or program coordinator for further information. Students who transfer to Auburn University's Journalism major are required to take a minimum of 21 credit hours in Auburn's program.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History ¹	3	Core Social Science	3
Core Social Science	3	Foreign Language II (College Core)	4
Foreign Language I (College Core)	4	Core Fine Arts	3
Core Math	3	JRNL 1100 Journalism Fundamentals	3
	16		16

Sophomore

Fall	Hours	Spring	Hours
Core Literature ¹	3	Core Humanities or Core Literature to complete sequence ¹	3
Core Science I	4	Core Science II	4

Approved Humanities Choice ³	3 Core Social Science or Core History to complete sequence ¹	3
JRNL 2210 Newswriting	3 Elective ²	2
CMJN 2100 Concepts in Communications and Journalism	3 JRNL 2310 Reporting	3

16**15****Junior**

Fall	Hours	Spring	Hours	Summer	Hours
Courses from Journalism Groups 1, 2, or 3 ⁵	9	Courses from Journalism Groups 1, 2, or 3 ⁵	9	JRNL 4920 Journalism Internship	3
Electives ²	6	Electives ²	6		
	15		15		3

Senior

Fall	Hours	Spring	Hours
CMJN 4000 Mass Media Law and Regulation	3	Courses from Journalism Groups 3 or 4 ⁵	9
Course from Journalism Groups 3 or 4 ⁵	3	Electives ²	3
Electives ²	6	UNIV 4AA0 University Graduation	0
	12		12

Total Hours: 120

- ¹ Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or Core Literature in the discipline not selected as the sequence.
- ² Electives must be selected from courses outside the Department of Communication and Journalism. Students must see their advisers for appropriate courses.
- ³ One Core Humanities must cover SLO 3.
- ⁴ JRNL 2310 fulfills SLO 7.
- ⁵ Students must meet with their advisers to determine approved courses for Groups 1, 2, 3, and 4.

Curriculum in Public Relations

Students must apply for admission to the PRCM major. All applicants must have completed 30 hours of course work (including the university core or its equivalents), JRNL 1100 with a B or better, and earn a minimum 2.3 GPA in , ENGL 1120, and Core Social Science. See the department chair or program coordinator for further information. Students who transfer to Auburn University's PRCM major are required to take a minimum of 21 hours in the AU program.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History	3	Foreign Language II (College Core)	4
Foreign Language I (College Core)	4	Core Social Science	3
Core Mathematics	3	Approved Humanities Choice ²	3
COMM 1000 Public Speaking ¹	3	Elective	3
	16		16

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Core History to complete sequence	3
Core Science I	4	Core Science II	4
JRNL 1100 Journalism Fundamentals	3	Core Fine Arts	3
CMJN 2100 Concepts in Communications and Journalism	3	ECON 2020 Principles of Microeconomics	3
Elective	3	JRNL 2210 Newswriting	3
	16		16

Junior

Fall	Hours	Spring	Hours
PRCM 3040 Foundations of Public Relations	3	PRCM 3050 Case Studies and Ethics in Public Relations ³	3
Course from Group 1 ⁴	3	Course from Group 2 ⁴	3
Supporting Course Work ⁵	3	Course from Group 3 ⁴	3
Electives	6	Supporting Course Work ⁵	3
		Elective	3
	15		15

Senior

Fall	Hours	Spring	Hours
PRCM 4080 Writing for Public Relations ³	3	PRCM 4020 Style and Design in Public Relations Messages	3
PRCM 4510 Survey Research Methods ³	3	PRCM 4090 Public Relations Campaigns	3
Supporting Course Work ⁵	3	Supporting Course Work ⁵	3
Elective	3	PRCM 4920 Internship	3
		Elective	2
		UNIV 4AA0 University Graduation	0
	12		14

Total Hours: 120

¹ COMM 1000 fulfills SLO 7.

² One Core Humanities choice must cover SLO 3.

³ This course is a prerequisite for PRCM 4090.

⁴ Students should meet with their advisers about appropriate courses from Groups 1, 2, and 3.

⁵ Students should meet with their advisers to identify Supporting Courses.

Curriculum in Radio, Television, and Film

Students must apply for admission to the RTVF major. All applicants must have completed 30 hours of course work (including the university core or its equivalents), COMM 1000 with a B or better and earn a minimum 2.3 GPA in ENGL 1100, , and Core Social Science. See the department chair or program coordinator for further information. Students who transfer to Auburn University's RTVF major are required to take a minimum of 21 hours in Auburn's program.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
Core Social Science		3 Core Social Science	3
Foreign Language I (College Core)		4 Foreign Language II (College Core)	4
Core History		3 Core Mathematics	3
COMM 1000 Public Speaking ¹		3 Approved Humanities Choice ²	3
	16		16
Sophomore			
Fall	Hours	Spring	Hours
Core Science I		4 Core Science II	4
Core Literature		3 Core History to complete sequence	3
RTVF 2350 Introduction to Film Studies ³		3 CMJN 2100 Concepts in Communications and Journalism	3
Elective/Supporting Cognate courses ⁴		⁵ Electives/Supporting Cognate courses ⁴	6
	15		16
Junior			
Fall	Hours	Spring	Hours
RTVF 3300 Foundation of Mass Communication		3 RTVF 3350 Writing for Radio, Television and Film or 3380 Broadcast Newswriting	3
RTVF 2800 Multimedia Production or 2420 Introduction to Filmmaking		3 Course from Major Group 1 ⁵	3
Course from Major Group 2 ⁵		3 Course from Major Group 2 ⁵	3
CMJN 3350 Visual Communication		3 Electives/Supporting Cognate courses ⁴	6
Electives/Supporting Cognate courses ⁴		3	
	15		15
Senior			
Fall	Hours	Spring	Hours
Courses from Major Group 1 ⁵		9 Courses from Major Group 1 ⁵	9
Electives/Supporting Cognate courses ⁴		6 RTVF 4920 Internship	3
		UNIV 4AA0 University Graduation	0
	15		12

Total Hours: 120

¹ COMM 1000 fulfills SLO 7.

² One Core Humanities choice must cover SLO 3.

³ RTVF 2350 may count either to satisfy the Core Fine Arts requirement or as a major course. However, it cannot count as both.

⁴ Students must meet with their advisers to determine appropriate electives and courses for their Supporting Cognate.

⁵ Students must meet with their advisers to identify approved courses for Groups 1 and 2.

Journalism Minor

CMJN 2100	Concepts in Communications and Journalism	3
JRNL 1100	Journalism Fundamentals	3

JRNL 2210	Newswriting	3
Select 9 additional hours from the following: ¹		9
CMJN 4000	Mass Media Law and Regulation	
JRNL 3220	Magazine and Feature Writing	
JRNL 3410	Photojournalism	
JRNL 3470	Editing and Design	
JRNL 3510	Multimedia Journalism	
JRNL 3530	Sports Reporting	
JRNL 4320	Entrepreneurial Journalism	
JRNL 4410	Journalism History	
JRNL 4417	Honors Journalism History	
JRNL 4430	Sports, Media and Society	
JRNL 4480	Advanced Publication Design	
JRNL 4490	Literary Journalism	
JRNL 4870	Community Journalism	
JRNL 4970	Special Topics in Journalism	

¹ This minor requires 9 hours of foundations course work and 9 hours of course work from the list below. Students must talk with their advisers to identify appropriate area course work and ensure that they meet the prerequisites for each course.

Students must earn at least a 2.0 in the minor to successfully complete it.

Communication Disorders

The undergraduate major in Communication Disorders is a pre-professional health care degree that prepares students to enter graduate programs in the communication disorders of either speech-language pathology or audiology. To become nationally certified speech-language pathologists or audiologists, students must earn a graduate degree. The Bachelor of Science undergraduate degree also can be used for employment as a speech-language pathology aide in the public schools of some but not all states. The BS degree, however, is intended for students who are capable of and committed to enrollment in an accredited graduate program in the field.

Students must comply with these requirements to be admitted to the Communication Disorders major:

- Students must apply for admission to the major. Students' applications for admission must be received by January 30 in order for them to begin the major during the following summer term. Applications must be received by May 30 in order for students to begin the major during the following fall semester. Applications may be submitted any time prior to the deadline. Students may get information about the applications process and the appropriate forms from Haley Center 1199, Department of Communication Disorders or online at the departmental website www.cla.auburn.edu/communicationdisorders/. The top 30 applicants are accepted in each of two admission cycles during the year.
- They must have completed 30 hours of course work in the university core courses and have at least a B average in English Composition I and II.
- Students must submit a 300-word letter of intent.
- They should check with the department chair or program coordinator for further information about entry requirements.

Once they are admitted to the BS Communication Disorders, students have to meet these requirements in order to graduate:

- Students must earn a C or higher in each major course. Any courses where students do not receive a C or higher must be repeated. Under these circumstances, graduation may be delayed.
- Students must have a 3.0 GPA to enroll in CMDS 4910 Clinical Practicum.

Major

- Communication Disorders (p. 306)

Curriculum in Communication Disorders

Students desiring the Communication Disorders (CMDS) major must formally apply for admission to the program after completion of 30 semester hours of course work that meets university core requirements.

Applications and procedures for admission are available in the CMDS Department, Haley 1199. Students must apply for admission by January 30 to begin the major in summer semester and applications must be received by May 30 to begin the major in fall semester. Applications may be submitted at any time prior to the deadlines. Students must earn a C or higher in each major courser. Must repeat CMDS courses with grade below C to count in major; graduation may be delayed. Students must have a 3.0 GPA to take Clinical Practicum (CMDS 4910).

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Foreign Language I (College Core)	4	Foreign Language II (College Core)	4
Core History	3	Approved Humanities Choice ¹	3
Select one of the following:	3	Core Mathematics	3
PSYC 2010/2017 Introduction to Psychology		Core Social Science	3
ANTH 1000 Introduction to Anthropology			
SOCY 1000 Sociology Global Perspective			
Elective/Supporting course ²	3		
	16		16

Sophomore

Fall	Hours	Spring	Hours
BIOL 1000 Introduction to Biology & BIOL 1001 Introduction to Biology Laboratory	4	COMM 1000 Public Speaking ³	3
Core Literature	3	BIOL 1010 A Survey of Life & BIOL 1011 A Survey of Life Laboratory	4
CMDS 3000 Introduction to Speech Pathology- Audiology ⁴	3	Core Fine Arts	3
Elective/Supporting courses ²	5	Core History to complete sequence	3
		Elective/Supporting course ²	3
	15		16

Junior

Fall	Hours	Spring	Hours
CMDS 3400 Anatomy and Physiology of Speech	3	CMDS 3410 Phonetics	3
CMDS 4520 Language Acquisition	3	CMDS 3560 Neuroan for Commun Disorders	3
CMDS 4600 Introduction to Audiology	3	CMDS 4560 Child and Adolescent Language Disorder	3
Elective/Supporting courses ²	5	CMDS 4650 Introduction to Clinical Procedures in Audiology	3
		Elective/Supporting course ²	3
	14		15

Senior

Fall	Hours	Spring	Hours
CMDS 4510 Articulation Disorders	3	CMDS 4530 Fluency Disorders	3

CMDS 4580 Introduction to Clinical Procedures in Speech-Language Pathology	3	CMDS 4540 Vocal Disorders	3
CMDS 4400 Adult Neurogenics Communication Disorders	3	CMDS 4620 Hearing Rehabilitation	3
Elective/Supporting courses ²	6	CMDS 4910 Clinical Practicum in Speech-Language Pathology ⁵	1
		Elective/Supporting course ²	3
		UNIV 4AA0 University Graduation	0
	15		13

Total Hours: 120

- ¹ The Core Humanities choice must cover SLO 3.
- ² Students should meet with their advisers for the listing of approved courses.
- ³ COMM 1000 fulfills SLO 7.
- ⁴ This course can be taken during the summer terms.
- ⁵ Students must have a GPA of at least 3.0 to take CMDS 4910.

SUMMER STARTING SEQUENCE

Junior

Summer	Hours
CMDS 3000 Introduction to Speech Pathology-Audiology	3
CMDS 3400 Anatomy and Physiology of Speech	3
CMDS 4520 Language Acquisition	3
Elective/Supporting course ²	6

Junior

Fall	Hours
CMDS 3410 Phonetics	3
CMDS 3560 Neuroan for Commun Disorders	3
CMDS 4560 Child and Adolescent Language Disorder	3
CMDS 4600 Introduction to Audiology	3
Elective/Supporting course ²	3

Senior

Summer	Hours
CMDS 4510 Articulation Disorders	3
CMDS 4580 Introduction to Clinical Procedures in Speech-Language Pathology	3
CMDS 4620 Hearing Rehabilitation	3
Elective/Supporting courses ²	8

Senior

Fall	Hours
CMDS 4400 Adult Neurogenics Communication Disorders	3
CMDS 4530 Fluency Disorders	3
CMDS 4540 Vocal Disorders	3
CMDS 4650 Introduction to Clinical Procedures in Audiology	3
CMDS 4910 Clinical Practicum in Speech-Language Pathology ⁵	1
UNIV 4AA0 University Graduation	0

² Students should meet with their advisers for the listing of approved courses.

⁵ Students must have a GPA of at least 3.0 to enroll in CMDS 4910.

TOTAL HOURS - 120

Economics

Majors from the Department of Economics pursue careers in business, banking and finance, government, and consulting. They are also prepared to enter graduate or professional programs in economics, law, business, or public policy. The department offers a Bachelor of Science in Economics with a primary and a quantitative track. The primary track requires students to complete a minor outside of the Department of Economics. The quantitative track is intended for students with a strong interest in pursuing graduate education in economics, and it requires additional mathematics and statistics courses. Students should check with a departmental adviser for requirements in the quantitative track.

Students must maintain at least a 2.0 GPA in major courses to graduate.

Major

- Economics - Primary Track (p. 308)
- Economics - Quantitative Track (p. 309)

Minor

- Economics (p. 311)

Curriculum in Economics: Primary Track

Freshman		
Fall	Hours Spring	Hours
ENGL 1100 English Composition I	3 Core History ¹	3
Core Fine Arts	3 ENGL 1120 English Composition II	3
MATH 1610 Calculus I or 1680 Calculus with Business Applications I	4 MATH 1690 Calculus With Business Apps II	3
Foreign Language I (College Core)	4 Foreign Language II (College Core)	4
	Approved Humanities Choice ²	3
	14	16

Sophomore

Fall	Hours Spring	Hours
Core Literature ¹	3 Core Humanities (excluding COMM 1000) or Core Literature to complete the sequence ¹	3
Core Social Science or Core History to complete the sequence ¹	3 Core Science II	4
Core Science I	4 Select one of the following:	3
ECON 2020 Principles of Microeconomics	3 STAT 2610 Statistics for Business and Economics	
	STAT 2010 Statistics for Social and Behavior Sciences	
	STAT 2510 Statistics for Biological and Health Sciences	
	BUAL 2600 Business Analytics I	
	ECON 2030 Principles of Macroeconomics	3
	Elective ³	3
	13	16

Junior

Fall	Hours Spring	Hours
ECON 3020 Intermediate Microeconomics	3 ECON 3030 Intermediate Macroeconomics	3
ECON 4300 International Economics	3 ECON 3600 Mathematical Methods for Economists	3
Electives ³	10 Electives ³	9
	16	15

Senior

Fall	Hours Spring	Hours
ECON 4600 Econometrics I ⁴	3 Economics Electives ⁵	9
Economics Electives ⁵	6 Electives ³	6
Electives ³	6 UNIV 4AA0 University Graduation	0
	15	15

Total Hours: 120

¹ Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or one Core Literature in the discipline not selected as the sequence.

² One Core Humanities choice must cover SLO 3.

³ Students must complete an outside minor.

⁴ ECON 4600 fulfills SLO 7.

⁵ Students should meet with their advisers to select appropriate Economics electives at the 3000-level or above.

Curriculum in Economics: Quantitative Track

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	Core History ¹	3
Core Fine Arts	3	ENGL 1120 English Composition II	3
MATH 1610/1617 Calculus I	4	MATH 1620 Calculus II	4
Foreign Language I (College Core)	4	Foreign Language II (College Core)	4
		Approved Humanities Choice ²	3
	14		17
Sophomore			
Fall	Hours	Spring	Hours
Core Literature ¹	3	Core Humanities (excluding COMM 1000) or Core Literature to complete sequence ¹	3
Core Social Science or Core History to complete sequence ¹	3	Core Science II	4
Core Science I	4	Select one of the following:	3
ECON 2020 Principles of Microeconomics	3	STAT 2610 Statistics for Business and Economics	
		STAT 2010 Statistics for Social and Behavior Sciences	
		STAT 2510 Statistics for Biological and Health Sciences	
		BUAL 2600 Business Analytics I	
		ECON 2030 Principles of Macroeconomics	3
		Elective ³	3
	13		16
Junior			
Fall	Hours	Spring	Hours
ECON 3020 Intermediate Microeconomics	3	ECON 3030 Intermediate Macroeconomics	3
ECON 4300 International Economics	3	ECON 3600 Mathematical Methods for Economists	3
MATH 2630 Calculus III	4	MATH 2660 Topics in Linear Algebra	3
MATH 3100/STAT 3600 Introduction to Advanced Mathematics	3	MATH 5200/STAT 3610 Analysis I	3
Elective ³	2	Elective ³	3
	15		15
Senior			
Fall	Hours	Spring	Hours
ECON 5020 Advanced Microeconomics	3	ECON 5030 Macroeconomic Theory and Policy	3
ECON 4600 Econometrics I ⁴	3	Economics Electives ³	6
Economics Elective ³	3	Electives ³	6
Electives ³	6	UNIV 4AA0 University Graduation	0
	15		15

Total Hours: 120

- ¹ Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or Core Literature in the discipline not selected as the sequence.
- ² One Core Humanities must cover SLO 3.
- ³ Students must check with their advisers to determine appropriate economics electives and other electives.
- ⁴ ECON 4600 fulfills SLO 7.

Economics Minor

15 semester hours in economics (all at 3000-level or above). This minor is designed to offer students majoring in other disciplines the opportunity to gain additional training in the field of economics. This 15 hour program allows students the flexibility to tailor course work to their specific academic interests and career goals.

English

Students graduating with English majors have found careers as writers, marketing and advertising professionals, paralegals, teachers, editors, and other similar professions. Others have chosen to pursue graduate or pre-professional education, including advanced degrees in English or in other areas such as law, divinity, business, or medicine. The Department of English offers students a choice of studying in three different tracks: Creative Writing, Literature, or Professional Writing and Literacy Studies.

Major

- English - (p. 311) Creative Writing (p. 311)
- English - (p. 311) Literature (p. 312)
- English - (p. 311) Professional Writing and Literacy Studies (p. 314)

Minor

- English (p. 315)
- English - Creative Writing (p. 315)
- English - Technical Professional Communication (p. 316)
- Linguistics (https://nextbulletin.auburn.edu/undergraduate/collegeofliberalarts/departments/english/linguistics_minor)
- Medieval and Renaissance/Early Modern Studies (p. 316)

Curriculum in English: Creative Writing

Students must take ENGL 2000 (Introduction to Creative Writing) as their gateway course to this track. ENGL 4240 (Special Project in Creative Writing) is the capstone course.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Foreign Language I (College Core)	4	Foreign Language II (College Core)	4
Core Social Science	3	Core Fine Arts	3
Core Mathematics	3	Core Social Science	3
		Approved Humanities Choice ¹	3
	13		16

Sophomore

Fall	Hours	Spring	Hours
Select one of the following: ²		3 Select one of the following to complete a sequence: ²	3
ENGL 2230 British Literature before 1789		ENGL 2230 British Literature before 1789	
ENGL 2240 British Literature after 1789		ENGL 2240 British Literature after 1789	
ENGL 2250 American Literature before 1865		ENGL 2250 American Literature before 1865	
ENGL 2260 American Literature after 1865		ENGL 2260 American Literature after 1865	
Core Science I		4 Core Science II	4
HIST 1010/1017 World History I		3 HIST 1020/1027 World History II	3
ENGL 2000 Introduction to Creative Writing		3 4000-level Literature Course	3
Approved Minor ³		3 Course from Group 1 ⁴	3
	16		16

Junior

Fall	Hours	Spring	Hours
ENGL 4200 Fiction Writing I		3 ENGL 4220 Poetry Writing I	3
ENGL Elective (2000-level or higher)		3 ENGL Elective (3000-level or higher)	3
Course from Group 2 ⁴		3 Approved Minor ³	3
Electives		6 Electives	6
	15		15

Senior

Fall	Hours	Spring	Hours
ENGL Elective (3000-level or higher)		3 ENGL 4230 Poetry Writing II	3
ENGL 4210 Fiction Writing II		3 ENGL 4240 Special Project in Creative Writing ⁵	3
Approved Minor ³		6 Approved Minor ³	3
Electives		3 Electives	5
		UNIV 4AA0 University Graduation	0
	15		14

Total Hours: 120

¹ One Core Humanities choice must cover SLO 3.

² Students are required to complete a Core Literature sequence in either British or American literature.

³ Students must complete a minor in a subject approved by the departmental adviser.

⁴ Students should see the departmental adviser to identify approved courses for Group 1 (Globalism, Sustainability, and Diversity), Group 2 (Linguistics or Rhetoric), and ENGL electives.

⁵ ENGL 4240 fulfills SLO 7.

Curriculum in English: Literature

Students take as the gateway course to the Literature Track either ENGL 2230 (British Literature before 1789), ENGL 2240 (British Literature after 1789), ENGL 2250 (American Literature before 1865), OR ENGL 2260 (American Literature after 1865). Students may not count literature courses taken to fulfill the Core Literature requirement for their gateway course. ENGL 4800 (Seminar in Literature) is the capstone course for this track.

Freshman

Fall			Hours Spring			Hours		
ENGL 1100 English Composition I			3 ENGL 1120 English Composition II			3		
Foreign Language I (College Core)			4 Foreign Language II (College Core)			4		
Core Social Science			3 Core Fine Arts			3		
Core Mathematics			3 Core Social Science			3		
			Approved Humanities Choice ¹			3		
			13			16		
Sophomore			Hours Spring			Hours		
Fall			Hours Spring			Hours		
Select one of the following: ²			3 Select one of the following to complete a sequence: ²			3		
ENGL 2230 British Literature before 1789			ENGL 2230 British Literature before 1789					
ENGL 2240 British Literature after 1789			ENGL 2240 British Literature after 1789					
ENGL 2250 American Literature before 1865			ENGL 2250 American Literature before 1865					
ENGL 2260 American Literature after 1865			ENGL 2260 American Literature after 1865					
Core Science I			4 Core Science II			4		
HIST 1010/1017 World History I			3 HIST 1020/1027 World History II			3		
Select one of the following as a gateway course:			3 ENGL Elective (2000-level or higher)			3		
ENGL 2230 British Literature before 1789			Group 2 ⁴			3		
ENGL 2240 British Literature after 1789								
ENGL 2250 American Literature before 1865								
ENGL 2260 American Literature after 1865								
Approved Minor ³			3					
			16			16		
Junior			Hours Spring			Hours		
Fall			Hours Spring			Hours		
ENGL 3130 Survey of Critical Theory			3 4400-level American literature course			3		
4300-level British literature course			3 ENGL Elective (3000-level or higher)			3		
Course from Group 1 ⁴			3 Approved Minor ³			3		
Electives			6 Electives			6		
			15			15		
Senior			Hours Spring			Hours		
Fall			Hours Spring			Hours		
4500-level Genre course			3 4600- or 4700-level Author or Topics course			3		
ENGL Elective (3000-level or higher)			3 ENGL 4800 Seminar in Literature ⁵			3		
Approved Minor ³			6 Approved Minor ³			3		
Electives			3 Electives			5		
			UNIV 4AA0 University Graduation			0		
			15			14		

Total Hours: 120

- ¹ One Core Humanities choice must cover SLO 3.
- ² Students are required to complete a Core Literature sequence in either British or American literature.
- ³ Students must complete a minor in a subject approved by the departmental adviser.
- ⁴ Students should see the departmental adviser to identify approved courses for Group 1 (Globalism, Sustainability, and Diversity), Group 2 (Linguistics or Rhetoric), and ENGL electives.
- ⁵ ENGL 4800 fulfills SLO 7.

Curriculum in English: Professional Writing and Literacy Studies

Students in the Professional Writing and Literacy Studies track must take ENGL 2010 (Introduction to Professional Writing) as the gateway course to this track. ENGL 4810 (Capstone in Professional Writing) is the capstone course.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Foreign Language I (College Core)	4	Foreign Language II (College Core)	4
Core Social Science	3	Core Fine Arts	3
Core Mathematics	3	Core Social Science	3
		Approved Humanities Choice ¹	3
	13		16

Sophomore

Fall	Hours	Spring	Hours
Select one of the following: ²	3	Select one of the following to complete a sequence: ²	3
ENGL 2230 British Literature before 1789		ENGL 2230 British Literature before 1789	
ENGL 2240 British Literature after 1789		ENGL 2240 British Literature after 1789	
ENGL 2250 American Literature before 1865		ENGL 2250 American Literature before 1865	
ENGL 2260 American Literature after 1865		ENGL 2260 American Literature after 1865	
Core Science I	4	Core Science II	4
HIST 1010/1017 World History I	3	HIST 1020/1027 World History II	3
ENGL 2010 Introduction to Professional Writing	3	4000-level Literature Course	3
Approved Minor ³	3	Course from Group 1 ⁴	3
	16		16

Junior

Fall	Hours	Spring	Hours
ENGL 3120 Survey of Rhetoric or 4180 Rhetorical Theory and Practice	3	ENGL 5000 Technical and Professional Editing or 5010 Document Design in Technical and Professional Communication	3
ENGL Elective (2000-level or higher)	3	ENGL Elective (3000-level or higher)	3
Course from Group 2 ⁴	3	Approved Minor ³	3
Electives	6	Electives	6
	15		15

Senior

Fall	Hours	Spring	Hours
Select one of the following:		3 Select one of the following:	3
ENGL 3040 Technical Writing		ENGL 4010 Topics in Writing	
ENGL 3080 Business Writing		ENGL 4160 Technology, Literacy and Culture	
ENGL 4000 Advanced Composition		ENGL 5030 Topics in Technical and Professional Communication	
ENGL Elective (3000-level or higher)		3 ENGL 4810 Capstone in Professional Writing ⁵	3
Approved Minor ³		6 Approved Minor ³	3
Electives		3 Electives	5
		UNIV 4AA0 University Graduation	0
		15	14

Total Hours: 120

- ¹ One Core Humanities choice must cover SLO 3.
- ² Students are required to complete a Core Literature sequence in either British or American literature.
- ³ Students must complete a minor in a subject approved by the departmental adviser.
- ⁴ Students should see the departmental adviser to identify approved courses from Group 1 (Globalism, Sustainability, and Diversity), Group 2 (Linguistics or Rhetoric), and ENGL electives.
- ⁵ ENGL 4810 fulfills SLO 7.

English Minor

Courses required: NONE

Elective Courses - See advisor for approved course listing.	15
Total Hours	15

- ¹ Minimum 9 hours at 3000-level or above

At least 9 hours required for the minor must be completed at Auburn.

English Minor (Creative Writing)

ENGL 2000	Introduction to Creative Writing	3
ENGL 4200	Fiction Writing I	3
ENGL 4210	Fiction Writing II	3
ENGL 4220	Poetry Writing I	3
ENGL 4230	Poetry Writing II	3
Total Hours		15

- ¹ Minimum 12 hours at 4000-level

Students must earn a 'C' or higher in all minor courses

English Minor (Technical & Professional Communication)

ENGL 2010	Introduction to Professional Writing	3
ENGL 5000	Technical and Professional Editing	3
ENGL 5010	Document Design in Technical and Professional Communication	3
ENGL 5030	Topics in Technical and Professional Communication	3
Select one of the following:		3
ENGL 3040	Technical Writing	
ENGL 3080	Business Writing	
ENGL 4010	Topics in Writing	
ENGL 4150	Topics in Language Study	
ENGL 4160	Technology, Literacy and Culture	
Total Hours		15

¹ Minimum 12 hours at 3000-level or above

Linguistics Minor

ENGL 3110	Survey of Linguistics	3
ENGL 4140	Language Variation	3
ENGL 4150	Topics in Language Study	3
ENGL 5410	History of the English Language	3
Select one of the following:		3
ENGL 3040	Technical Writing	
ENGL 4160	Technology, Literacy and Culture	
ENGL 5840	Approaches to English Grammar	
Total Hours:		15
Students must earn a "C" or better in all minor courses		

Medieval and Renaissance/Early Modern Studies Minor

Courses required: See advisor for approved course listing.		15
Total Hours		15

¹ Minimum 9 hours at 3000-level or above; no more than 6 hours at 2000-level.

Students must earn at least a C for all courses that count toward the minor.

Foreign Languages and Literatures

Graduates from the Department of Foreign Languages and Literatures have cited their foreign language studies and skills as the foundation for pursuing graduate studies or obtaining positions in communications, government, health professions, law, business, primary and secondary education, non-profit organizations, or academe. The Department of Foreign Languages and Literatures offers Bachelor of Arts degrees in French, French-International Trade, German, German-International Trade, Spanish, and Spanish-International Trade.

All students with previous language experience in French, German, or Spanish who wish to advance their studies in the same language must take the Foreign Language Placement Test prior to Camp War Eagle, Successfully Orienting Students, or enrollment in a foreign language course in these three areas.

Study Abroad is recommended for majors in Foreign Languages and Literatures.

Students must earn a C and maintain a 2.5 GPA in all major courses in order to graduate.

Major

- French (p. 317)
- French International Trade (p. 319)
- German (p. 320)
- German International Trade (p. 321)
- Spanish (p. 322)
- Spanish International Trade (p. 323)

Minor

- Asian Studies (p. 317)
- Classics (p. 317)
- French (p. 324)
- German (p. 324)
- Global Cultures (p. 324)
- Italian (p. 325)
- Spanish (p. 325)

Asian Studies Minor

Chinese or Japanese at the 2000 or 3000 level.	3
Elective Courses-See advisor for approved course listing.	12
Total Hours	15

¹ Minimum 12 hours at 3000-level or above

At least 9 hours required for the minor must be completed at Auburn or through AU approved study abroad.

Students must earn a C and maintain a 2.5 grade-point average in all courses that count toward the minor.

Classics Minor

Greek or Latin (at the 2000 or 3000 level)	3
Elective Courses - See advisor for approved course listing.	12
Total Hours	15

¹ Minimum 9 hours at 3000-level or above

At least 9 hours required for the minor must be completed at Auburn or through AU approved study abroad.

Student must earn a C and maintain a 2.5 grade-point average in all courses that count toward the minor.

Curriculum in French

Students must earn a C and maintain a 2.5 GPA in all major courses.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
FLFR 1010 Elementary French I		4 FLFR 1020 Elementary French II	4
Core History		3 Core Social Science	3
Core Mathematics		3 Core Science I	4
Elective ¹		3	
	16		14
Sophomore			
Fall	Hours	Spring	Hours
Core Literature		3 Core History to complete sequence	3
Core Social Science		3 Approved Humanities Choice ²	3
Core Science II		4 Elective ¹	3
FLFR 2010 Intermediate French I		4 Core Fine Arts	3
		FLFR 2020 Intermediate French II	4
	14		16
Junior			
Fall	Hours	Spring	Hours
Select one of the following courses:		3 Select one of the following courses:	3
FLFR 3030 French Conversation		FLFR 3040 French Composition	
FLFR 3010 French Phonetics and Diction		FLFR 4020 Advanced Grammar and Stylistics	
FLFR 4030 French Continuing Conversation		FLFR 4040 French Continuing Composition	
Select one of the following courses:		3 FLFR 3110 French Civilization	3
FLFR 3100 Introduction to French Literature		Electives ¹	9
FLFR 3140 Survey of French Literature I			
FLFR 3150 Survey of French Literature II			
COMM 1000 Public Speaking ³		3	
Electives ¹		6	
	15		15
Senior			
Fall	Hours	Spring	Hours
FLFR Electives ¹		9 FLFR 4980 French Senior Capstone	1
Electives ¹		6 FLFR Electives ¹	9
		Electives ¹	5
		UNIV 4AA0 University Graduation	0
	15		15

Total Hours: 120

¹ Students must meet with their advisers to identify approved FLFR electives and to select other electives.

² One Core Humanities choice must cover SLO 3.

³ COMM 1000 fulfills SLO 7.

Curriculum in French-International Trade

Students must earn a C and maintain a 2.5 GPA in all major courses.

Freshman

Fall	Hours	Spring	Hours
COMM 1000 Public Speaking ¹		3 FLFR 1020 Elementary French II	4
FLFR 1010 Elementary French I		4 HIST 1020 World History II or 1027 Honors World History II	3
ENGL 1100/1107 English Composition I		3 ENGL 1120/1127 English Composition II	3
HIST 1010 World History I or 1017 Honors World History I		3 Approved Humanities Choice ²	3
Core Mathematics		3 Elective ³	3
	16		16

Sophomore

Fall	Hours	Spring	Hours
ECON 2020 Principles of Microeconomics		3 ECON 2030 Principles of Macroeconomics	3
Core Literature		3 Core Science II	4
Core Science I		4 Core Fine Arts	3
FLFR 2010 Intermediate French I		4 FLFR 2020 Intermediate French II	4
	14		14

Junior

Fall	Hours	Spring	Hours
Select one of the following courses:		3 ACCT 2210 Principles of Managerial Accounting	3
FLFR 3030 French Conversation		MKTG 3310 Principles of Marketing	3
FLFR 3010 French Phonetics and Diction		FLFR 3110 French Civilization	3
FLFR 4030 French Continuing Conversation		FLFR 3310 Business French	3
ACCT 2110 Principles of Financial Accounting		3 Elective ³	2
MNGT 3100 Principles of Management or 3810 Management Foundations		3	
Select one of the following courses:		3	
FLFR 3040 French Composition			
FLFR 4020 Advanced Grammar and Stylistics			
FLFR 4040 French Continuing Composition			
Elective ³		3	
	15		14

Senior

Fall	Hours	Spring	Hours
FINC 3610 Principles of Business Finance		3 FLFR 4980 French Senior Capstone	1
ECON 4300 International Economics		3 FINC 3100 Fundamentals of Global Trade or 5510 Multinational Financial Management	3
Select one of the following courses:		3 French Elective ³	6
FLFR 3100 Introduction to French Literature		FLFR 4310 French for International Trade	3
FLFR 3140 Survey of French Literature I		Business Elective ⁴	3

FLFR 3150 Survey of French Literature II	UNIV 4AA0 University Graduation	0
French Electives ³	6	
	15	16

Total Hours: 120

- ¹ COMM 1000 fulfills SLO 7.
- ² One Core Humanities choice must cover SLO 3.
- ³ Students should meet with their advisors to identify appropriate French and other electives.
- ⁴ Students must meet with their advisers to determine approved required and elective business courses.

Curriculum in German

Students must earn a C and maintain a 2.5 GPA in all major courses.

Freshman

Fall	Hours	Spring	Hours
FLGR 1010 Elementary German I	4	FLGR 1020 Elementary German II	4
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History	3	Core Social Science	3
Core Mathematics	3	Core Science I	4
Elective ¹	3		
	16		14

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Approved Humanities Choice ²	3
Core Social Science	3	Core History to complete sequence	3
Core Science II	4	Elective ¹	3
FLGR 2010 Intermediate German I	4	Core Fine Arts	3
		FLGR 2020 Intermediate German II	4
	14		16

Junior

Fall	Hours	Spring	Hours
COMM 1000 Public Speaking ³	3	FLGR 3020 Intermediate German Composition and Conversation	3
FLGR 3010 Beginning German Composition and Conversation	3	German Elective ¹	3
FLGR 3100 Introduction to German Literature ⁴	3	Electives ¹	9
Electives ¹	6		
	15		15

Senior

Fall	Hours	Spring	Hours
FLGR 3110 German Culture and Civilization I <i>or</i> 3120 German Culture and Civilization II	3	FLGR 4980 Senior Capstone	1
German Electives ¹	6	German Electives ¹	9

Electives ¹	6 Electives ¹	5
	UNIV 4AA0 University Graduation	0
	15	15

Total Hours: 120

¹ Students should meet with their advisers to determine appropriate German and other electives.

² One Core Humanities choice must cover SLO 3.

³ COMM 1000 fulfills SLO 7.

⁴ FLGR 4110 or FLGR 4120 may be used.

Curriculum in German-International Trade

Students must earn a C and maintain a 2.5 GPA in all major courses.

Freshman

Fall	Hours	Spring	Hours
FLGR 1010 Elementary German I	4	FLGR 1020 Elementary German II	4
ENGL 1100 English Composition I	3	HIST 1020 World History II or 1027 Honors World History II	3
Core Mathematics	3	ENGL 1120 English Composition II	3
COMM 1000 Public Speaking ²	3	Approved Humanities Choice ¹	3
HIST 1010 World History I or 1027 Honors World History II	3	Elective ³	3
	16		16

Sophomore

Fall	Hours	Spring	Hours
ECON 2020 Principles of Microeconomics	3	ECON 2030 Principles of Macroeconomics	3
Core Literature	3	Core Science II	4
Core Science I	4	Core Fine Arts	3
FLGR 2010 Intermediate German I	4	FLGR 2020 Intermediate German II	4
	14		14

Junior

Fall	Hours	Spring	Hours
ACCT 2110 Principles of Financial Accounting	3	ACCT 2210 Principles of Managerial Accounting	3
Elective ³	3	MKTG 3310 Principles of Marketing	3
MNGT 3100 Principles of Management or 3810 Management Foundations	3	FLGR 3020 Intermediate German Composition and Conversation	3
FLGR 3010 Beginning German Composition and Conversation	3	FLGR 3110 German Culture and Civilization I or 3120 German Culture and Civilization II	3
FLGR 3100 Introduction to German Literature ⁴	3	Elective ³	2
	15		14

Senior

Fall	Hours	Spring	Hours
FINC 3610 Principles of Business Finance	3	FLGR 4320 German for Bus and Economics II	3

ECON 4300 International Economics	3 FINC 3100 Fundamentals of Global Trade or 5510 Multinational Financial Management	3
FLGR 4310 German for Business and Economics I	3 FLGR 4980 Senior Capstone	1
German Electives ³	6 German Electives ³	6
	Business Elective ³	3
	UNIV 4AA0 University Graduation	0
	15	16

Total Hours: 120

- ¹ One Core Humanities must cover SLO 3.
- ² COMM 1000 fulfills SLO 3.
- ³ Students should meet with their advisers to determine appropriate German, business, and other elective courses.
- ⁴ FLGR 4110 and FLGR 4120 may be used.

Curriculum in Spanish

Students must earn a C and maintain a 2.5 GPA in all major courses.

Freshman

Fall	Hours	Spring	Hours
FLSP 1010 Elementary Spanish I	4	FLSP 1020 Elementary Spanish II	4
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History	3	Core Social Science	3
Core Mathematics	3	Core Science I	4
Elective ¹	3		
	16		14

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Core History to complete sequence	3
Core Social Science	3	Approved Humanities Choice ²	3
Core Science II	4	Core Fine Arts	3
FLSP 2010 Intermediate Spanish I	4	Elective ¹	3
		FLSP 2020 Intermediate Spanish II	4
	14		16

Junior

Fall	Hours	Spring	Hours
COMM 1000 Public Speaking ³	3	FLSP 3030 Spanish Conversation	3
FLSP 3010 Spanish Phonetics	3	FLSP 3040 Spanish Composition	3
FLSP 3020 Spanish Syntax	3	Electives ¹	9
Electives ¹	6		
	15		15

Senior

Fall	Hours	Spring	Hours
FLSP 3100 Introduction to Hispanic Literature		3 FLSP Electives ¹	9
FLSP Electives ¹		6 FLSP 4980 Senior Capstone	1
Electives ¹		6 Electives ¹	5
		UNIV 4AA0 University Graduation	0
	15		15

Total Hours: 120

¹ Students should check with their advisers to determine appropriate electives.

² One Core Humanities choice must cover SLO 3.

³ COMM 1000 fulfills SLO 7.

Curriculum in Spanish-International Trade

Students must earn a C and maintain a 2.5 GPA in all major courses.

Freshman

Fall	Hours	Spring	Hours
FLSP 1010 Elementary Spanish I		4 FLSP 1020 Elementary Spanish II	4
ENGL 1100 English Composition I		3 HIST 1020 World History II or 1027 Honors World History II	3
Core Mathematics		3 ENGL 1120 English Composition II	3
HIST 1010 World History I or 1017 Honors World History I		3 Approved Humanities Choice ¹	3
COMM 1000 Public Speaking ²		3 Elective ³	3
	16		16

Sophomore

Fall	Hours	Spring	Hours
ECON 2020 Principles of Microeconomics		3 ECON 2030 Principles of Macroeconomics	3
Core Literature		3 Core Science II	4
Core Science I		4 Core Fine Arts	3
FLSP 2010 Intermediate Spanish I		4 FLSP 2020 Intermediate Spanish II	4
	14		14

Junior

Fall	Hours	Spring	Hours
ACCT 2110 Principles of Financial Accounting		3 ACCT 2210 Principles of Managerial Accounting	3
FLSP 3010 Spanish Phonetics		3 MKTG 3310 Principles of Marketing	3
MNGT 3100 Principles of Management or 3810 Management Foundations		3 FLSP 3030 Spanish Conversation	3
FLSP 3020 Spanish Syntax		3 FLSP 3040 Spanish Composition	3
Elective ³		3 Elective ³	2
	15		14

Senior

Fall	Hours	Spring	Hours
FINC 3610 Principles of Business Finance	3	FLSP 4980 Senior Capstone	1
ECON 4300 International Economics	3	FINC 3100 Fundamentals of Global Trade <i>or</i> 5510 Multinational Financial Management	3
FLSP 3100 Introduction to Hispanic Literature	3	FLSP Business Elective ⁴	3
FLSP Business Elective ⁴	3	FLSP Electives ³	6
FLSP Elective ³	3	Business Elective ⁴	3
		UNIV 4AA0 University Graduation	0
	15		16

Total Hours: 120
¹ One Core Humanities choice must cover SLO 3.² COMM 1000 fulfills SLO 7.³ Students should meet with their advisers to determine appropriate Spanish, business, and other electives.

French Minor

At least 9 hours required for the minor must be completed at Auburn or through Auburn-approved study abroad.

Students must earn a C and maintain a 2.5 grade-point average in all courses that count toward the minor.

Minimum of 6 hours and no more than 8 hours equivalent to FLFR 2010 and FLFR 2020 6-8

Elective courses ¹ 9

Total Hours 15-17

¹ Students are required to complete a minimum 9 hours at the 3000-level or above. They must meet with their advisers to identify appropriate electives.

German Minor

At least 9 hours required for the minor must be completed at Auburn or through Auburn-approved study abroad.

Students must earn a C and maintain a 2.5 GPA in all courses that count toward the minor.

Minimum of 6 hours and no more than 8 hours in courses equivalent to FLGR 2010 and FLGR 2020 6-8

Elective courses ¹ 9

Total Hours 15-17

¹ Students are required to complete a minimum of 9 hours at 3000-level or above. They must meet with their advisers to determine appropriate elective courses.

Global Cultures Minor

15 semester hours in minor (minimum 9 hours at 3000-level or above). Student take a sequence of two language skills courses at the 2000 or 3000 level and three supporting courses (see advisor for approved course listing). Students must earn a C and maintain a 2.5 GPA for all courses that count toward the minor. Courses taken in fulfillment of the College Core or other majors and minors may not be counted toward the Global Cultures minor.

Italian Studies Minor

Courses required: 3 hours of Italian (at the 2000 or 3000 level)	3
Elective Courses - See advisor for approved course listing.	12
Total Hours	15

¹ Minimum 9 at 3000-level or above

At least 9 hours required for the minor must be completed at Auburn or through AU approved study abroad.

Students must earn a C and maintain a 2.5 grade-point average in all courses that count toward the minor.

Latin American Studies Minor

15 semester hours in minor (minimum 9 hours at 3000-level or above). Student must test at the equivalent of FLFR 2010 or FLSP 2010 in either French, Spanish, or Portuguese, and complete a minimum of five courses in at least three different disciplines (see advisor for approved course listing). Students must earn a C and maintain a 2.5 GPA for all courses that count toward the minor. Courses taken in fulfillment of the College Core or other majors and minors may not be counted toward the Latin American Studies minor.

Spanish Minor

At least 9 hours required for the minor must be completed at Auburn or through Auburn-approved study abroad.

Students must earn a C and maintain a 2.5 grade-point average in all courses that count toward the minor.

Minimum of 6 hours and no more than 8 hours in courses equivalent to FLSP 2010 and FLSP 2020	6-8
Elective courses ¹	9
Total Hours	15-17

¹ Students are required to complete a minimum 9 hours at 3000-level or above. They must see their advisers for approved elective courses.

History

The curriculum in History at Auburn endeavors to teach students both knowledge of the past and skills in the research and communication of that knowledge. As such, the Bachelor of Arts in History can serve as a sound foundation for graduates to pursue a number of career options. Auburn graduates in History have gone on to a diverse range of careers that include public history and archives, historic preservation, secondary education, public administration, law, military service, politics, and a range of business careers. While some students go on to teach history in schools and a small number pursue graduate education in history, most graduates are spread through career paths representing the broad possibilities that come with a well-developed ability to ask clear questions, research the information and sources necessary to construct an answer, write factually and persuasively, and think historically.

Students should check with their academic advisor to declare a History major.

Once they are admitted to the BA in History, students must meet these requirements:

- All History majors should take HIST 3800. Historian's Craft as early as possible in their academic program after completing core history. Students must complete the course before enrolling in History courses above the 3000 level.
- Students must earn a grade of C or higher in HIST 3800 before taking HIST 4950 Senior Thesis.
- To graduate, students must earn a minimum 2.0 GPA overall and in the History major.

Major

- History (p. 326)

Minor

- History (p. 327)

Curriculum in History

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
Foreign Language I (College Core)		4 Foreign Language II (College Core)	4
Core History		3 Core History to complete the sequence	3
Core Mathematics		3 Core Fine Arts	3
	13		13

Sophomore

Fall	Hours	Spring	Hours
Core Literature		3 Core Social Science	3
Approved Humanities Choice ¹		3 Core Science II	4
Core Social Science		3 Free Electives ³	3
Core Science I		4 Liberal Arts Electives ³	3
Group 1 course ²		3 Group 1 course ²	3
	16		16

Junior

Fall	Hours	Spring	Hours
HIST 3800 Historian's Craft ⁴		3 Group 2 courses ²	6
Group 2 courses ²		6 Liberal Arts Electives ³	6
Liberal Arts Elective ³		3 Free Electives ³	4
Free Elective ³		3	
	15		16

Senior

Fall	Hours	Spring	Hours
COMM 1000 Public Speaking ⁵		3 HIST 4950 Senior Thesis: Historical Research and Writing	3
Group 3 courses ²		6 Group 3 course ²	3
Liberal Arts Elective ³		3 Liberal Arts Elective ³	3
Free Electives ³		4 Free Electives ³	6
		UNIV 4AA0 University Graduation	0
	16		15

Total Hours: 120

- ¹ One Core Humanities choice must cover SLO 3.
- ² Group 1 courses consist of any 2000-level history course; Group 2 courses consist of any 3000-level history course; Group 3 courses consist of any 5000-level history course. One three-hour course must cover topics outside of European and United States history. The following courses will meet this one-course requirement: HIST 2100, HIST 2120, HIST 2130, HIST 3630, HIST 3640, HIST 5600, HIST 5620, HIST 5640, HIST 5650, HIST 5660, HIST 5670, and HIST 5680. The history adviser may also approve specific sections of HIST 3970 and HIST 5970 if they are focused on non-European and non-United States topics.
- ³ Students must meet with their advisers to identify liberal arts and free electives.
- ⁴ Students must successfully complete HIST 3800 before they can take 5000-level courses in history. In addition, they must complete HIST 3800 with at least a C to enroll in HIST 4950.
- ⁵ COMM 1000 fulfills SLO 7.

History Minor

Courses Required: Minimum of 6 hours at the 2000-level and 9 hours at the 3000-level or above.	15
Total Hours	15

- ¹ All above the 1000-level

At least 9 hours required for the minor must be completed at Auburn or through AU approved study abroad.

Music

The Department of Music offers the Bachelor of Arts and Bachelor of Music degrees. Considered a professional degree by the National Association of Schools of Music, the Bachelor of Music degree prepares students for graduate study in music performance, for professional careers as performers, and for careers as applied music teachers. Other potential jobs can be found in churches, commercial music business, arts administration, and some private schools.

The Department of Music works in cooperation with the College of Education in providing course offerings for music education degrees. Students pursuing music education degrees must register through the College of Education.

The Department of Music provides qualified and interested students, regardless of their major, with a variety of music experiences. Performance groups, such as the Marching Band, Symphonic Band, Concert Band, Campus Band, Orchestra, Jazz Band, Percussion Ensemble, Concert Choir, Men's Chorus, Women's Chorus, University Singers, Gospel Choir, and various smaller music ensembles are available to all students. Many performance groups require a successful audition before admission.

Students must comply with these requirements to be admitted to the BA or BM in Music:

- Students must apply for admission.
- They must successfully complete an instrumental or vocal audition. Information about the audition is available from the departmental office.

Once they are admitted to a degree program in music, students have to meet these requirements in order to graduate:

- Students must earn a grade of C or higher in all music courses in order for those courses to count toward degree requirements.
- Students taking private instruction (MUAP) must successfully complete auditions before enrollment and must concurrently enroll in MUSI 1000. Performance Attendance. Information is available from the departmental office.

In all Fine Arts curricula, electives may include six hours Basic ROTC or Advanced ROTC. In curricula that do not allow for six hours of electives, ROTC may be taken in lieu of required courses with approval of the departmental adviser. University core courses may not be replaced by Basic or Advanced ROTC.

Majors

- Music (p. 328)
- Music Performance - Instrumental (p. 329)

- Music Performance - Piano (p. 331)
- Music Performance - Voice (p. 332)

Minor

- Music (p. 333)

BA Curriculum in Music

Music majors must earn a grade of C or higher in music courses to have them count toward the degree.

Freshman

Fall	Hours	Spring	Hours
MUSI 1000 Performance Attendance	0	MUSI 1000 Performance Attendance	0
MUAP 1520 Performance I	2	MUAP 1620 Performance II	2
MUSI 1310 Music Theory I	2	MUSI 1410 Music Theory II	2
MUSI 1320 Music Skills I	1	MUSI 1420 Music Skills II	1
MUSE 1000-level Ensemble	1	MUSE 1000-level Ensemble	1
MUSI 1020 Piano Skills I - Rudiments	1	MUSI 1030 Piano Skills II	1
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History ¹	3	MUSI 2730 Appreciation of Music (Core Fine Arts)	3
Minor ²	2	Minor ²	2
	15		15

Sophomore

Fall	Hours	Spring	Hours
MUSI 1000 Performance Attendance	0	MUSI 1000 Performance Attendance	0
MUAP 2520 Performance III	2	MUAP 2620 Performance IV	2
MUSI 2310 Music Theory III	2	MUSI 2410 Music Theory IV	2
MUSI 2320 Music Skills III	1	MUSI 2420 Music Skills IV	1
MUSE 2000-level Ensemble	1	MUSE 2000-level Ensemble	1
MUSI 2040 Functional Piano I	1	MUSI 2050 Functional Piano II	1
Core Literature ¹	3	Core Humanities (except COMM 1000) or Core Literature to complete sequence ¹	3
Core Social Science or Core History to complete sequence ¹	3	Core Social Science	3
Minor ²	2	Minor ²	2
	15		15

Junior

Fall	Hours	Spring	Hours
MUSI 3510 Music History I	3	MUSI 3520 Music History II	3
MUSI 3610 Choral Conducting I or 3630 Instrumental Conducting I ³	2	3000/4000-level elective course in Music ⁴	2
MUSE 3000-level Ensemble	1	MUSE 3000-level Ensemble	1
Core Science I	4	Core Science II	4

Core Math	3	Approved Humanities Choice ⁵	3
Minor ²	2	Minor ²	2
	15		15

Senior

Fall	Hours	Spring	Hours
3000/4000-level course in Music History/Theory	3	MUSE 4000-level Ensemble	1
MUSE 4000-level Ensemble	1	3000/4000-level elective course in Music ⁴	2
3000/4000-level elective course in Music ⁴	2	MUSI 4700 BA Senior Thesis/Project	3
Core Social Science	3	Foreign Language II (College Core)	4
Foreign Language I (College Core)	4	Minor ²	3
Electives ⁴	2	Electives ⁴	2
		UNIV 4AA0 University Graduation	0
	15		15

Total Hours: 120

- ¹ Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or Core Literature course in the area not selected as the sequence.
- ² Requirements for minors vary. Students should check with their advisers for appropriate courses.
- ³ MUSI 3610 or 3630 fulfills SLO 7.
- ⁴ Students should meet with their advisers to determine appropriate music electives and other elective courses.
- ⁵ One Core Humanities choice must cover SLO 3.

BM Curriculum in Music Performance - Instrumental

Music majors must earn a grade of C or higher in music courses to have them count toward the degree.

Freshman

Fall	Hours	Spring	Hours
MUSI 1000 Performance Attendance	0	MUSI 1000 Performance Attendance	0
MUAP 1520 Performance I	2	MUAP 1620 Performance II	2
MUSI 1310 Music Theory I	2	MUSI 1410 Music Theory II	2
MUSI 1320 Music Skills I	1	MUSI 1420 Music Skills II	1
MUSE 1000-level Ensemble	1	MUSE 1000-level Ensemble	1
MUSI 1020 Piano Skills I - Rudiments	1	MUSI 1030 Piano Skills II	1
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History ¹	3	MUSI 2730 Appreciation of Music (Core Fine Arts)	3
Electives ²	2		
	15		13

Sophomore

Fall	Hours	Spring	Hours
MUSI 1000 Performance Attendance	0	MUSI 1000 Performance Attendance	0
MUAP 2520 Performance III	2	MUAP 2620 Performance IV	2
MUSI 2310 Music Theory III	2	MUSI 2410 Music Theory IV	2

MUSI 2320 Music Skills III	1 MUSI 2420 Music Skills IV	1
MUSE 2000-level Ensemble	1 MUSE 2000-level Ensemble	1
MUSE 2000-level Ensemble	1 MUSE 2000-level Ensemble	1
MUSI 2040 Functional Piano I	1 MUSI 2050 Functional Piano II	1
Core Literature ¹	3 Core Humanities (except COMM 1000) or Core Literature to complete sequence ¹	3
Core Social Science or Core History to complete sequence ²	3 Core Social Science	3
	14	14

Junior

Fall	Hours Spring	Hours
MUSI 1000 Performance Attendance	0 MUSI 1000 Performance Attendance	0
MUAP 3520 Performance V	2 MUAP 3620 Performance VI	2
MUSI 3510 Music History I	3 MUSI 3800 Junior Performance Recital	1
Select one of the following courses:	2 MUSI 3520 Music History II	3
MUSI 3150 Brass Literature	MUSE 3000-level Ensemble	1
MUSI 3160 Percussion Literature	MUSE 3000-level Ensemble	1
MUSI 3170 Woodwind Literature	Core Math	3
MUSI 3180 String Literature	Core Science II	4
MUSI 3630 Instrumental Conducting I ³	2 Elective ²	1
MUSE 3000-level Ensemble	1	
MUSE 3000-level Ensemble	1	
Core Science I	4	
Elective ²	1	
	16	16

Senior

Fall	Hours Spring	Hours
MUSI 1000 Performance Attendance	0 MUSI 1000 Performance Attendance	0
MUAP 4520 Performance VII	2 MUAP 4620 Performance VIII	2
3000/4000-level course in Music History/Theory	3 3000/4000-level course in Music History/Theory	3
MUSE 4000-level Ensemble	1 MUSE 4000-level Ensemble	1
MUSE 4000-level Ensemble	1 MUSE 4000-level Ensemble	1
MUSI 4020 Instrumental Pedagogy	2 MUSI 4800 Senior Performance Recital	2
Core Social Science	3 Approved Humanities Choice ⁴	3
Foreign Language I (College Core)	4 Foreign Language II (College Core)	4
	UNIV 4AA0 University Graduation	0
	16	16

Total Hours: 120

¹ Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or Core Literature course in the area not selected as the sequence.

² Students should meet with their advisers to determine appropriate elective courses.

³ MUSI 3630 fulfills SLO 7.

⁴ One Core Humanities must cover SLO 3.

BM Curriculum in Music Performance - Piano

Music majors must earn a grade of C or higher in music courses to have them count toward the degree.

Freshman

Fall	Hours	Spring	Hours
MUSI 1000 Performance Attendance	0	MUSI 1000 Performance Attendance	0
MUAP 1520 Performance I	2	MUAP 1620 Performance II	2
MUSI 1310 Music Theory I	2	MUSI 1410 Music Theory II	2
MUSI 1320 Music Skills I	1	MUSI 1420 Music Skills II	1
MUSE 1000-level Ensemble	1	MUSE 1000-level Ensemble	1
MUSE 1000-level Ensemble	1	MUSE 1000-level Ensemble	1
MUSI 2040 Functional Piano I	1	MUSI 2050 Functional Piano II	1
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core History ¹	3	MUSI 2730 Appreciation of Music (Core Fine Arts)	3
Elective ²	1	Elective ²	1
	15		15

Sophomore

Fall	Hours	Spring	Hours
MUSI 1000 Performance Attendance	0	MUSI 1000 Performance Attendance	0
MUAP 2520 Performance III	2	MUAP 2620 Performance IV	2
MUSI 2310 Music Theory III	2	MUSI 2410 Music Theory IV	2
MUSI 2320 Music Skills III	1	MUSI 2420 Music Skills IV	1
MUSE 2000-level Ensemble	1	MUSE 2000-level Ensemble	1
Core Literature ¹	3	Core Humanities (except COMM 1000) or Core Literature to complete sequence ¹	3
Core Math	3	Core Social Science	3
Core Social Science or Core History to complete sequence ¹	3	Electives ²	2
	15		14

Junior

Fall	Hours	Spring	Hours
MUSI 1000 Performance Attendance	0	MUSI 1000 Performance Attendance	0
MUAP 3520 Performance V	2	MUAP 3620 Performance VI	2
MUSI 3510 Music History I	3	MUSI 3800 Junior Performance Recital	1
MUSI 3610 Choral Conducting I or 3630 Instrumental Conducting I ³	2	MUSI 3520 Music History II	3
MUSI 3110 Piano Literature I	2	MUSI 3120 Piano Literature II	2
MUSE 3000-level Ensemble	1	MUSE 3000-level Ensemble	1
Core Science I	4	Approved Humanities Choice ⁴	3

Elective ²	1 Core Science II	4
	15	16
Senior		
Fall	Hours Spring	Hours
MUSI 1000 Performance Attendance	0 MUSI 1000 Performance Attendance	0
MUAP 4520 Performance VII	2 MUAP 4620 Performance VIII	2
3000/4000-level course in Music History/Theory	3 3000/4000-level course in Music History/Theory	3
MUSE 4000-level Ensemble	1 3000/4000-level course in Music History/Theory	3
MUSI 4030 Piano Pedagogy	2 MUSE 4000-level Ensemble	1
Core Social Science	3 MUSI 4800 Senior Performance Recital	2
Foreign Language I (College Core)	4 Foreign Language II (College Core)	4
	UNIV 4AA0 University Graduation	0
	15	15
Total Hours: 120		

¹ Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or Core Literature course in the area not selected as the sequence.

² Students should meet with their advisers to determine appropriate elective courses.

³ MUSI 3610 or 3630 fulfills SLO 7.

⁴ One Core Humanities choice must cover SLO 3.

BM Curriculum in Music Performance - Voice

Music majors must earn a grade of C or higher in music courses to have them count toward the degree.

Freshman

Fall	Hours Spring	Hours
MUSI 1000 Performance Attendance	0 MUSI 1000 Performance Attendance	0
MUAP 1520 Performance I	2 MUAP 1620 Performance II	2
MUSI 1310 Music Theory I	2 MUSI 1410 Music Theory II	2
MUSI 1320 Music Skills I	1 MUSI 1420 Music Skills II	1
MUSE 1000-level Ensemble	1 MUSE 1000-level Ensemble	1
MUSI 1020 Piano Skills I - Rudiments	1 MUSI 1030 Piano Skills II	1
MUSI 1050 Singer's Diction	1 ENGL 1120 English Composition II	3
ENGL 1100 English Composition I	3 MUSI 2730 Appreciation of Music (Core Fine Arts)	3
Core History ¹	3 MUSI 2150 Advanced Diction	1
Elective ²	1	
	15	14

Sophomore

Fall	Hours Spring	Hours
MUSI 1000 Performance Attendance	0 Core Social Science	3
MUAP 2520 Performance III	2 MUSI 1000 Performance Attendance	0
MUSI 2310 Music Theory III	2 MUAP 2620 Performance IV	2
MUSI 2320 Music Skills III	1 MUSI 2410 Music Theory IV	2

MUSE 2000-level Ensemble	1 MUSI 2420 Music Skills IV	1
MUSE 2000-level Ensemble	1 MUSE 2000-level Ensemble	1
MUSI 2040 Functional Piano I	1 MUSE 2000-level Ensemble	1
Core Literature ¹	3 MUSI 2050 Functional Piano II	1
Core Social Science or Core History to complete sequence ¹	3 Core Humanities (except COMM 1000) or Core Literature to complete sequence ¹	3
	Elective ²	1
	14	15

Junior

Fall	Hours	Spring	Hours
MUSI 1000 Performance Attendance	0	MUSI 1000 Performance Attendance	0
MUAP 3520 Performance V	2	MUAP 3620 Performance VI	2
MUSI 3510 Music History I	3	MUSI 3800 Junior Performance Recital	1
MUSI 3610 Choral Conducting I ³	2	MUSI 3520 Music History II	3
MUSI 3130 Vocal Literature I	2	MUSI 3140 Vocal Literature II	2
MUSE 3000-level Ensemble	1	MUSE 3000-level Ensemble	1
Core Science I	4	Core Math	3
Electives ²	2	Core Science II	4
	16		16

Senior

Fall	Hours	Spring	Hours
MUSI 1000 Performance Attendance	0	MUSI 1000 Performance Attendance	0
MUAP 4520 Performance VII	2	MUAP 4620 Performance VIII	2
3000/4000-level course in Music History/Theory	3	3000/4000-level course in Music History/Theory	3
MUSE 4000-level Ensemble	1	MUSE 4000-level Ensemble	1
MUSI 4010 Vocal Pedagogy	2	MUSI 4800 Senior Performance Recital	2
Core Social Science	3	Approved Humanities Choice ⁴	3
Foreign Language I (College Core)	4	Foreign Language II (College Core)	4
		UNIV 4AA0 University Graduation	0
	15		15

Total Hours: 120

- ¹ Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or Core Literature course in the area not selected as the sequence.
- ² Students should meet with their advisers to determine appropriate elective courses.
- ³ MUSI 3610 fulfills SLO 7.
- ⁴ One Core Humanities must cover SLO 3.

Music Minor

To minor, arrange for a music theory skills test and performance audition with an applied music instructor. No course may be duplicated other than repeated ensembles. A minimum of nine (9) hours must be in 3000 or 4000 level courses.

MUSE Ensemble		1
MUSE Ensemble		1
MUSE Ensemble		1
MUSI 1310	Music Theory I	2
MUSI 1320	Music Skills I	1
MUSI 1410	Music Theory II	2
MUSI 1420	Music Skills II	1
MUSI 1000	Performance Attendance (2 semesters required)	0
Select from Group A or Group B:		2
Group A		
MUSI 3610	Choral Conducting I	
or MUSI 3630	Instrumental Conducting I	
Group B		
MUSI 4010	Vocal Pedagogy	
or MUSI 4020	Instrumental Pedagogy	
or MUSI 4030	Piano Pedagogy	
Select from Group A or Group B:		2-3
Group A		
MUSI 3510	Music History I	
or MUSI 3520	Music History II	
Group B		
MUSI 3110	Piano Literature I	
or MUSI 3120	Piano Literature II	
or MUSI 3130	Vocal Literature I	
or MUSI 3140	Vocal Literature II	
or MUSI 3150	Brass Literature	
or MUSI 3160	Percussion Literature	
or MUSI 3170	Woodwind Literature	
or MUSI 3180	String Literature	
Electives		
Select from Group A, Group B, Group C or Group D:		2-3
Group A		
MUAP 1310	Performance I (I) ¹	
MUAP 1410	Performance II (II)	
Group B		
MUSI 3510	Music History I	
Group C		
MUSI 3520	Music History II	
Group D		
MUSI 3110	Piano Literature I	
or MUSI 3120	Piano Literature II	
or MUSI 3130	Vocal Literature I	
or MUSI 3140	Vocal Literature II	
or MUSI 3150	Brass Literature	
or MUSI 3160	Percussion Literature	
or MUSI 3170	Woodwind Literature	

or MUSI 3180	String Literature	
Total Hours		15-17

¹ Entry is dependent upon successful audition and studio space.

Philosophy

Graduates from the Department of Philosophy have found positions in education, law, the ministry, business, politics, and news. Some have chosen to pursue graduate or professional education in philosophy, law, theology, and business.

Majors

- Philosophy (p. 335)

Minors

- Philosophy (p. 336)
- Religious Studies (p. 336)

Curriculum in Philosophy

Philosophy major requires a total of 33 hours with at least 6 hours at the 4000 level.

Freshman

Fall	Hours	Spring	Hours
Core Math	3	Foreign Language II (College Core)	4
ENGL 1100 English Composition I	3	Core Social Science	3
Foreign Language I (College Core)	4	Core Fine Arts	3
Core History	3	1000-level philosophy course	3
		ENGL 1120 English Composition II	3
	13		16

Sophomore

Fall	Hours	Spring	Hours
Core Social Science	3	Core Science II	4
Core Science I	4	Core History to complete sequence	3
Course from Area 1: 3000/4000-level course in ethics or value theory ¹	3	Course from Area II: 3000/4000-level course in metaphysics or epistemology ¹	3
Elective	3	PHIL 3110 Symbolic Logic	3
Core Literature	3	Elective	3
	16		16

Junior

Fall	Hours	Spring	Hours
Course from Area I: 3000/4000-level course in ethics or value theory ¹	3	Electives	8
Electives	6	Course from Area II: 3000/4000-level course in metaphysics or epistemology ¹	3
PHIL 3330 History of Ancient Philosophy	3	PHIL 3340 History of Early Modern Philosophy	3

COMM 1000 Public Speaking ²	3	
	15	14
Senior		
Fall	Hours	Spring
Electives	9	Electives 9
3000/4000-level philosophy electives ¹	6	3000/4000-level philosophy electives ¹ 6
		UNIV 4AA0 University Graduation 0
	15	15
Total Hours: 120		

¹ Students must meet with their advisers to determine approved courses for Area I, Area II, and philosophy electives.

² COMM 1000 fulfills SLO 7.

Philosophy Minor

Logic Course

PHIL 1010	Introduction to Logic	3
or PHIL 3110	Symbolic Logic	

Ethics Course

Select one of the following:	3
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PHIL 1020	Introduction to Ethics	
PHIL 1030	Ethics and the Health Sciences	
PHIL 1040	Business Ethics	

Elective Courses - See advisor for approved course listing.	12
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Total Hours	18
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¹ Minimum 12 hours at 3000/4000-level

Religious Studies Minor

Select one core Logic and one core Ethics course	6
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RELG 1010	Introduction to Religious Studies	3
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Elective Courses - See advisor for approved course listing.	9
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Total Hours	18
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¹ Minimum 9 hours at 3000-level or above

Political Science

Graduates from the Department of Political Science have found employment in government, the legal profession, nonprofit organizations, and the private sector and have pursued graduate or professional education in political science and public administration. The Department of Political Science is committed to the goal of helping students become well-rounded, effective, and successful members of the global community. Political Science is a vast academic discipline that focuses on the processes and outcomes of collective public decision making. It endeavors to create a stimulating intellectual environment that challenges students to broaden their capacity for a reasoned analysis of political life.

The department offers three undergraduate majors: Political Science, Public Administration, and Health Services Administration. Students who wish to choose to major in a different academic discipline yet still develop a secondary expertise in government and politics can minor in Political Science. The Department of Political Science is also home to the Pre-Law Scholars Program.

Health Services Administration

Students must comply with these requirements to be considered for admission into the Health Services Administration major:

- Submit the Health Services Administration Application with all required documents.
- Complete 30 credit hours of course work, including the university core courses or equivalents.
- Earn a 2.3 or higher GPA in ACCT 2110, MATH 1680 or MATH 1610, and HADM 3000.
- Submit a statement of purpose of no more than 500 words.
- Potential students are encouraged to check with the department chair or program coordinator for further information about entry requirements and application deadlines.

Majors

- Health Services Administration (p. 337)
- Political Science (p. 339)
- Public Administration (p. 340)

Minors

- Latin American Studies (p. 325)
- Political Science (p. 341)
- Public Administration (p. 341)

Curriculum in Health Services Administration

Students are admitted into Health Services Administration by application only. For admission into the HADM major, students must have completed 30 semester hours of course work, have earned a minimum 2.3 GPA in a list of specified courses. See the department chair or program coordinator for further information.

Freshman

Fall	Hours Spring	Hours Summer	Hours
ENGL 1100 English Composition I	3 Elective ²	3 HADM 2103 Medical Terminology	3
Foreign Language I (College Core)	4 Select one of the following: ³	3	
COMM 1000 Public Speaking ¹	3 PHIL 1010 Introduction to Logic		
MATH 1680 Calculus with Business Applications I or 1610 Calculus I	4 PHIL 1020 Introduction to Ethics		
	PHIL 1030 Ethics and the Health Sciences		
	PHIL 1040 Business Ethics		
	ENGL 1120 English Composition II	3	
	Foreign Language II (College Core)	4	
	14	13	3

Sophomore

Fall	Hours Spring	Hours
Core History	3 Core History to complete sequence	3

Core Literature	3 ACCT 2210 Principles of Managerial Accounting	3
ACCT 2110 Principles of Financial Accounting	3 Core Science II	4
Core Science I	4 ECON 2030 Principles of Macroeconomics	3
ECON 2020 Principles of Microeconomics	3 HADM 3000 Gateway to Health Care Administration	3
	16	16

Junior

Fall	Hours Spring	Hours Summer	Hours
HADM 3700 Health Law	3 Elective ²	3 HADM 4920 Internship ⁴	6
HADM 4200 Health Care Insurance and Reimbursement	3 FINC 3610 Principles of Business Finance or 3810 Foundations of Business Finance	3	
PSYC 2010 Introduction to Psychology or SOCY 1000 Sociology Global Perspective	3 ENGL 3080 Business Writing	3	
MNGT 3100 Principles of Management or 3810 Management Foundations	3 HADM 3300 Health Care Policy	3	
	HRMN 3420 Human Resource Management	3	
	12	15	6

Senior

Fall	Hours Spring	Hours
HADM 4000 Developing Care Organizations	3 Select one of the following:	4
HADM 4880 Health Information Technology	3 STAT 2010 Statistics for Social and Behavior Sciences	
Health Administration Seminar class ⁵	3 STAT 2510 Statistics for Biological and Health Sciences	
Fine Arts Core	3 STAT 2610 Statistics for Business and Economics	
	Health Administration Seminar class ⁵	3
	HADM 4950 Capstone Seminar	3
	MKTG 3310 Principles of Marketing or 3810 Foundations of Business Marketing	3
	UNIV 4AA0 University Graduation	0
	12	13

Total Hours: 120

¹ COMM 1000 fulfills SLO 7.

² Students should meet with their advisers to determine appropriate electives.

³ These courses fulfill SLO 3.

- ⁴ Students must complete all prerequisites before being approved to enroll in an internship. Students should meet with the departmental adviser for more information.
- ⁵ Students should see the departmental adviser for a list of approved classes.

Curriculum in Political Science

POLI 1090 American Government with a C or better is a prerequisite for some higher-level political science courses. A score of 4 or higher on the AP American Government test satisfies the prerequisite requirement. Contact the department chair or program coordinator for further information.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
POLI 1090/1097 American Government in Multicultural World	3	Foreign Language II (College Core)	4
Foreign Language I (College Core)	4	Core Social Science ¹	3
Core Math	3	Core Science I	4
Core History	3		
	16		14

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Course from Group 2 - Distribution Requirement ³	3
Core Science II	4	Core History to complete sequence	3
Core Fine Arts	3	COMM 1000 Public Speaking ⁴	3
Approved Humanities Choice ²	3	Electives	3
Electives	3	POLI 3000 Political Science Research Methods I	3
	16		15

Junior

Fall	Hours	Spring	Hours
Course from Group 1 - Political Thought ³	3	Course from Group 2 - Distribution Requirement ³	3
Course from Group 2 - Distribution Requirement ³	3	Course from Group 3 - Concentration Requirement ³	3
Electives	9	Electives	9
	15		15

Senior

Fall	Hours	Spring	Hours
Course from Group 3 - Concentration Requirement ³	3	Course from Group 3 - Concentration Requirement ³	3
Courses from Group 4 - POLI Electives ³	6	Courses from Group 4 - POLI Electives ³	6
Electives	6	Electives	5
		UNIV 4AA0 University Graduation	0
	15		14

Total Hours: 120

- ¹ POLI 1050 is recommended.
- ² One Core Humanities choice must cover SLO 3.
- ³ Students must see their advisers to identify approved courses for Groups 1, 2, 3, and 4.
- ⁴ COMM 1000 fulfills SLO 7.

Curriculum in Public Administration

POLI 1090 American Government with a C or better is a prerequisite for some higher-level political science courses. A score of 4 or higher on the AP American Government test satisfies the prerequisite requirement. Contact the department chair or program coordinator for further information.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Foreign Language I (College Core)	4	Foreign Language II (College Core)	4
Approved Humanities Choice (PHIL 1020 preferred) ¹	3	Core Science II	4
Core Science I	4	POLI 1090 American Government in Multicultural World	3
	14		14

Sophomore

Fall	Hours	Spring	Hours
Core History	3	Core History to complete sequence	3
Core Literature	3	Course from Group 1 - Quantitative Methods ²	4
Core Mathematics	3	POLI 1050 Global Politics and Issues <i>or</i> ECON 2020 Principles of Microeconomics	3
Core Fine Arts	3	COMM 1000 Public Speaking ³	3
Elective	3	Elective	3
	15		16

Junior

Fall	Hours	Spring	Hours
POLI 3250 Introduction to Public Administration	3	POLI 3260 Organization Theory	3
POLI 3270 Policy Process	3	Course from Group 3 - Conflict Resolution ²	3
Course from Group 4 - Cultural Diversity ²	3	Electives	9
Electives	6		
	15		15

Senior

Fall	Hours	Spring	Hours
POLI 4140 Public Finance	3	Course from Group 2 - Government and Administration ²	3
POLI 4160 Public Personnel Administration	3	Group 5 - Public Law ²	3
Course from Group 2 - Government and Administration ²	3	Electives	9

Electives	7 UNIV 4AA0 University Graduation	0
	16	15

Total Hours: 120

- ¹ One Core Humanities choice must cover SLO 3.
- ² Students must meet with their advisers to determine approved courses for Groups 1, 2, 3, 4, and 5.
- ³ COMM 1000 fulfills SLO 7.

Political Science Minor

The Political Science Minor requires 15 semester hours of Political Science courses above the 1000-level, with a minimum of 9 hours at the 3000-level or above. Students must earn a cumulative 2.00 GPA in the courses that count toward the minor. Courses taken in fulfillment of the College Core or other majors and minors may not be counted toward the Political Science minor.

POLI 1090 American Government does not count toward the minor, but it is the prerequisite for some higher level Political Science courses.

See the Political Science Department for the approved course listing.

Public Administration Minor

The Public Administration minor requires 6 hours of foundations course work and 9 hours of emphasis in one of two tracks or Non-Profit Organizations and Community Governance. Students must meet prerequisites for all courses.

POLI 3250	Introduction to Public Administration	3
POLI 3270	Policy Process	3
Track A-Public Management. Select 9 additional hours from the following courses:		9
POLI 2100	State and Local Government	
POLI 3260	Organization Theory	
POLI 3750	Issues in Public Administration	
POLI 3760	Issues in Public Policy	
POLI 4050	American Local Government	
POLI 4140	Public Finance	
POLI 4160	Public Personnel Administration	
POLI 5170	Election Law	
POLI 5270	Election Administration	
POLI 5550	Issues in Public Administration ¹	
POLI 5560	Issues in Public Policy	
Track B: Non-Profit Organizations and Community Governance		9
POLI 5370	Nonprofit Management	3
POLI 5550	Issues in Public Administration (Non-Profit Law) ¹	1-3
Select three additional hours from the following:		3
POLI 3340	Introduction to Conflict Resolution	
POLI 4140	Public Finance	
POLI 5150	Intergovernmental Relations and Federalism	
POLI 5180	Administrative Law	
POLI 5340	Theory and Practice of Mediation	

POLI 5550	Issues in Public Administration (Field Research) ¹
POLI 5550	Issues in Public Administration (Non-Profit Fund Raising) ¹

Psychology

Graduates from the Department of Psychology have found positions in psychological services, business, and other related areas such as government and education. Approximately, 25% of students pursue graduate or professional education in a variety of fields, ranging from service-oriented to science-oriented areas of the social sciences. The Bachelor of Arts in the Department of Psychology is well grounded in scientific foundations and equally concerned with shared social responsibilities. It affords students the opportunity to gain new and fascinating understandings of human behavior.

To graduate, students must earn a C or better in all major courses.

Major

- Psychology (p. 342)

Minor

- Psychology (p. 343)

Curriculum in Psychology

Students must earn a grade of C or higher in all major courses.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Foreign Language I (College Core)	4	Foreign Language II (College Core)	4
Elective ¹	3	Core History	3
Core Mathematics	3	PSYC 2010 Introduction to Psychology	3
	13		13

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Core History to complete sequence	3
PSYC 2020 Orientation to Psychology Major	1	Core Social Science	3
STAT 2010 Statistics for Social and Behavior Sciences	4	Core Science II	4
Select one of the following:		PSYC 2140 Research Methods in Psychology	4
SOCY 1000 Sociology Global Perspective			
ANTH 1000 Introduction to Anthropology			
GEOG 1010 Global Geography			
Core Science I	4		
	15		14

Junior

Fall	Hours	Spring	Hours
Approved Humanities Choice ²	3	Core Fine Arts	3

Groups A and B Psychology Electives ¹	6 Groups A and B Psychology Electives ¹	6
Electives ¹	8 Electives ¹	8
	17	17

Senior

Fall	Hours Spring	Hours
COMM 1000 Public Speaking ³	3 Group C Psychology Electives ¹	6
Group C Psychology Electives ¹	6 Electives ¹	8
Electives ¹	8 UNIV 4AA0 University Graduation	0
	17	14

Total Hours: 120

- ¹ Students should meet with the psychology adviser to determine approved course listings for psychology electives and other electives. It is recommended that students take foundational courses (those listed in Groups A and B) in their junior year and advanced electives (those in Group C) in their senior year.
- ² One Core Humanities choice must cover SLO 3.
- ³ COMM 1000 fulfills SLO 7.

Psychology Minor

PSYC 2010	Introduction to Psychology	3
Elective Courses - See advisor for approved course listing.		12
Total Hours		15

- ¹ Minimum 9 hours at 3000-level or above

Sociology, Anthropology, and Social Work

The Department of Sociology, Anthropology, and Social Work offers three Bachelor of Arts degrees. Sociology graduates have found positions in law enforcement agencies such as the Drug Enforcement Agency, the military, and social service agencies. Some have chosen to pursue graduate or professional education in sociology, social work, criminology, and social forestry, among others. The Sociology major provides students a solid foundation within the discipline, particularly in theory, research methods and statistics, and human diversity. Anthropology graduates have found positions in cultural resource management and archaeology. Some have chosen to pursue graduate or professional education in anthropology and development studies. The Anthropology major takes a four-field approach, offering courses in archaeology, physical anthropology, cultural anthropology, and linguistic anthropology. Social Work graduates are trained to become beginning-level generalist practitioners eligible for licensure and to apply for advanced-standing social work graduate programs. The BA in Social Work is fully accredited by the Council on Social Work Education.

Sociology

To earn a BA in Sociology, students must meet these requirements:

- Students must earn a C or better in SOCY 1000, SOCY 3500, SOCY 3700, SOCY 3400/SOCY 4400/SOCY 4700, SOCY 4800 and in STAT 2010 in order to graduate. If they choose to take ANTH 2000 rather than SOCY 3700, they must earn a C in that course.
- Students must complete the requirements to earn a minor in order to graduate. Any university minor is acceptable.

Anthropology

To earn a BA in Anthropology, students must meet these requirements:

- Students must take all courses in Tier 1, one course from Tier 2, one course from Tier 3, and four courses from Tier 4.

Social Work

Students must comply with these requirements to be admitted to the BA in Social Work:

- Students are required to apply for admission to the Social Work major.
- Their applications must include two letters of recommendation and a personal-statement essay not longer than four double-spaced pages.
- They must successfully complete an interview with a Social Work adviser.
- Students must earn a C or better in SOCY 1000, SOWO 2000, and SOWO 3910 and a combined GPA of 2.5 before applying to the program.

Once they are admitted, students have to meet these requirements to move through the Social Work major and graduate:

- Admission to the Social Work major is required before students can take SOWO 4060.
- Students must earn an overall GPA of 2.5 to graduate.
- Students must have a 2.5 GPA to take SOWO 4920, which is required for graduation.

Majors

- Anthropology (p. 344)
- Social Work (p. 345)
- Sociology (p. 347)

Minors

- Anthropology (p. 344)
- Social Work (p. 348)
- Sociology (p. 348)

Anthropology Minor

Courses required: NONE

Elective Courses - See advisor for approved course listing.	15
Total Hours	15

¹ Minimum 9 hours at 3000-level or above

Curriculum in Anthropology

The anthropology program takes a four-field approach to the study of the human condition, offering courses in archaeology, physical anthropology, cultural anthropology, and linguistic anthropology.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ANTH 1000 Introduction to Anthropology	3
Foreign Language I (College Core)	4	ENGL 1120 English Composition II	3
Core History ¹	3	Foreign Language II (College Core)	4
Core Mathematics	3	Core Fine Arts	3
Elective	2	Elective	3
	15		16

Sophomore

Fall	Hours	Spring	Hours
SOCY 1000 Sociology Global Perspective <i>or</i> GEOG 1010 Global Geography	3	Core Social Science or Core History to complete the sequence ¹	3
Core Literature ¹	3	Core Science II	4
Approved Humanities Choice ²	3	ANTH 2000 Ethnographic Methods	3
Core Science I	4	ANTH 2310 Race, Gender, and Human Variation	3
ANTH 2100 Introductory Archaeology	3		
	16		13

Junior

Fall	Hours	Spring	Hours
Core Humanities (except COMM 1000) or Core Literature to complete sequence ¹	3	STAT 2010 Statistics for Social and Behavior Sciences	4
ANTH 3300 Physical Anthropology	3	Course from ANTH Tier 4 ³	3
ANTH 3100 Language and Culture	3	Course from ANTH Tier 2 or 3 ³	3
Course from ANTH Tier 4 ³	3	Electives	5
Elective	3		
	15		15

Senior

Fall	Hours	Spring	Hours
Course from ANTH Tier 2 or 3 ³	3	ANTH 4310 Anthropological Theory ⁴	3
Course from ANTH Tier 4 ³	3	Course from ANTH Tier 4 ³	3
Electives	9	Electives	9
		UNIV 4AA0 University Graduation	0
	15		15

Total Hours: 120

¹ Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or Core Literature in the discipline not selected as the sequence.

² One Core Humanities choice must cover SLO 3.

³ Student must meet with their advisers to identify approved courses for Tiers 2, 3, and 4.

⁴ ANTH 4310 fulfills SLO 7.

Curriculum in Social Work

The Bachelor of Arts in Social Work is fully accredited by the Council on Social Work Education. Graduates are trained to become beginning-level generalist practitioners eligible for licensure and to apply for advanced standing social work graduate programs. Admission to the program is required before enrolling in SOWO 4060. SOCY 1000, SOWO 2000 and SOWO 3910 must be completed with a C or better prior to application.

Freshman

Fall	Hours	Spring	Hours
BIOL 1000 Introduction to Biology & BIOL 1001 Introduction to Biology Laboratory	4	BIOL 1010 A Survey of Life & BIOL 1011 A Survey of Life Laboratory	4

SOCY 1000 Sociology Global Perspective	3	ENGL 1120 English Composition II	3
ENGL 1100 English Composition I	3	Core Fine Arts	3
PSYC 2010 Introduction to Psychology	3	Core Math	3
Elective	3	Core History ¹	3
	16		16

Sophomore

Fall	Hours	Spring	Hours
Core Literature ¹		3 PHIL 1030 Ethics and the Health Sciences	3
Foreign Language I (College Core)		4 Core Humanities or Core Literature to complete sequence ¹	3
Core Social Science or Core History to complete sequence ¹		3 Foreign Language II (College Core)	4
SOWO 2000 Introduction to Social Work		3 ECON 2020 Principles of Microeconomics	3
SOWO 2650 History of Social Welfare		3 SOWO 3910 Field Practicum Seminar	3
	16		16

Junior

Fall	Hours	Spring	Hours
SOCY 3500 Minority Groups		3 SOCY 2050 Crime and Justice in America	3
SOWO 3800 Human Behavior in Social Environment I		3 SOWO 3850 Human Behavior in the Social Environment II ³	3
SOWO 4060 Social Work Practice Methods I		3 SOWO 4070 Social Work Methods II	3
SOWO Elective ²		3 SOWO 4090 Social Welfare Policy	3
Elective		3 Social Science Elective ²	3
	15		15

Senior

Fall	Hours	Spring	Hours
SOCY 3700 Methods of Social Research <i>or</i> ANTH 2000 Ethnographic Methods		3 SOWO 4920 Internship in Social Work	9
SOWO 4080 Social Work Methods III		3 SOWO 4950 Senior Integrative Seminar	3
Elective		1 UNIV 4AA0 University Graduation	0
STAT 2010 Statistics for Social and Behavior Sciences		4	
Social Science Elective ²		3	
	14		12

Total Hours: 120

¹ Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or Core Literature in the discipline not selected as the sequence.

² Students must meet with their advisers to identify approved courses for SOWO electives and social science electives.

³ SOWO 3850 fulfills SLO 7.

Curriculum in Sociology

A primary goal of the Sociology program is to provide undergraduate and graduate majors a solid foundation within the discipline, particularly in the area of theory, research methods and statistics, and human diversity.

Freshman

Fall	Hours	Spring	Hours
SOCY 1000 Sociology Global Perspective ¹	3	ENGL 1120 English Composition II	3
ENGL 1100 English Composition I	3	Core History to complete sequence	3
Core History	3	Core Fine Arts	3
Approved Humanities Choice ²	3	Electives/Minor ³	6
COMM 1000 Public Speaking ⁴	3		
	15		15

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Core Social Science	3
Foreign Language I (College Core)	4	Foreign Language II (College Core)	4
Core Math	3	Core Science II	4
Core Science I	4	SOCY 3500 Minority Groups ¹	3
	14		14

Junior

Fall	Hours	Spring	Hours
STAT 2010 Statistics for Social and Behavior Sciences ¹	4	SOCY Concentration ³	3
SOCY Concentration ³	3	ANTH 2000 Ethnographic Methods <i>or</i> SOCY 3700 Methods of Social Research	3
SOCY Directed Elective ³	3	SOCY Directed Elective ³	3
Electives/Minor ³	6	Electives/Minor ³	7
	16		16

Senior

Fall	Hours	Spring	Hours
SOCY Concentration ³	6	SOCY Concentration ³	3
Select one of the following:	3	SOCY 4800 Senior Seminar ¹	3
SOCY 3400 Social Thought ¹		Electives/Minor ³	9
SOCY 4400 Contemporary Theory ¹		UNIV 4AA0 University Graduation	0
SOCY 4700 Theories of Crime and Criminality ¹			
Electives/Minor ³	6		
	15		15

Total Hours: 120

¹ Students must earn a C or better in the following courses: ANTH 2000, SOCY 1000, SOCY 3500, SOCY 3700, SOCY 3400, SOCY 4400, SOCY 4800, and STAT 2010.

² One Core Humanities choice must cover SLO 3.

- ³ Students must meet with their advisers to identify approved courses for electives, SOCY electives, and SOCY concentration. Students are required to complete a minor outside the department as part of electives. They must also complete a concentration.
- ⁴ COMM 1000 fulfills SLO 7.

Social Work Minor

SOWO 2000	Introduction to Social Work	3
SOWO 2650	History of Social Welfare	3
SOWO 3910	Field Practicum Seminar	3
Elective Courses - See advisor for approved course listing.		6
Total Hours		15

- ¹ Minimum 9 hours at 3000-level or above

Sociology Minor

Courses required: NONE

Elective Courses - See advisor for approved course listing.		15
Total Hours		15

- ¹ Minimum 12 hours at 3000-level or above

Theatre

Students graduating with degrees from the Department of Theatre find employment as actors, theatre technicians, administrators, and/or educators. The Department of Theatre provides instruction and production experience for students interested in developing their talents in the theatre arts, whether as majors or non-majors. Consequently, a broad range of classroom, laboratory, and performance experiences is provided in acting, directing, music theatre, dance, scenic and lighting design, costume design, theatre technology, construction and crafts, theatre history, dramatic literature, music theatre, theatre criticism, theatre administration, and management.

The Department of Theatre offers a Bachelor of Arts in Theatre and a Bachelor of Fine Arts in Theatre. The BA in Theatre is designed for students seeking to study theatre within the liberal arts curriculum. This degree is for students who choose to study theatre as a humanistic discipline or who wish to concentrate in theatre history, criticism, dramatic literature, dramaturgy, and directing. It is excellent preparation for more specialized training in graduate school or conservatory. The BFA in Theatre is designed for students who have specific professional goals in mind. It is for students seeking professional training in an intensive program in a single concentration—performance, music theatre, design/technology, or management.

BA in Theatre

To graduate with a BA in Theatre, students must earn a grade of C or higher in all theatre courses. Any course with a grade below a C must be repeated.

BFA in Theatre

Students must comply with these requirements to be admitted to the BFA in Theatre:

- Students must formally apply for admission to the BFA in Theatre.
- Students entering the BFA options in Design/Technology, Management, and Performance typically apply for admission in the spring of their sophomore year.
- Students entering the BFA option in Music Theatre audition in the fall semester prior to their freshman year.
- Application is through portfolio review (Design/Technology and Management options) or audition (Performance and Music Theatre options).

Once they are admitted to the BFA, students have to meet these requirements in order to graduate:

- Students must earn a grade of C or higher in all theatre courses. Any course with a grade below a C must be repeated.
- Students must maintain a 2.7 GPA in their area of emphasis.
- Continuance in the BFA degree tracks is subject to review each semester by faculty.
- Final recommendation for graduation is made after the successful presentation of a performance recital or the successful execution of a design or major production project during the student's final year. The success of a performance recital, design, or production model is determined by the Department of Theatre faculty.

In all Fine Arts curricula, electives may include six hours Basic ROTC or Advanced ROTC. In curricula that do not allow for six hours of electives, ROTC may be taken in lieu of required courses with approval of the departmental adviser. University core courses may not be replaced by Basic or Advanced ROTC.

Majors

- Theatre (p. 349)
- Theatre - Design / Technology (p. 350)
- Theatre - Management (p. 352)
- Theatre - Music Theatre (p. 353)
- Theatre - Performance (p. 354)

Minors

- Dance (p. 356)
- Theatre (p. 356)

BA Curriculum in Theatre

Theatre majors must earn a grade of C or higher in theatre courses, or they must repeat those courses for credit toward their degree.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
THEA 1010 Introduction to Theatre for Majors I	3	THEA 1110 Introduction to Theatre for Majors II ¹	3
THEA 2310 Theatre Technology I	3	THEA 2400 Design Aesthetics	3
THEA 2311 Theatre Technology I Lab	1	THEA 2610 Costume Construction	3
Foreign Language I (College Core)	4	Foreign Language II (College Core)	4
	14		16

Sophomore

Fall	Hours	Spring	Hours
Core History ²	3	Core Science II	4
Core Science I	4	Core Math	3
Core Literature ²	3	THEA 2910 Production Practicum II	1
THEA 2910 Production Practicum II	1	THEA 3700 Theatre History, Theory and Criticism I-Text	3
Theatre Elective ⁴	3	Theatre Elective ³	3
Approved Humanities Choice ⁵	3		
	17		14

Junior

Fall	Hours Spring	Hours
Core Social Science or Core History to complete sequence ²	3 Core Social Science	3
THEA 3910 Production Practicum III	1 Core Humanities (except COMM 1000) or Core Literature to complete sequence ²	3
THEA 3710 Theatre History, Theory and Criticism II-Body	3 THEA 3910 Production Practicum III	1
Theatre Elective ⁶	3 THEA 4950 Theatre Literature and Theory Seminar	3
THEA 3950 Directing Seminar <i>or</i> 3960 Dramaturgy Seminar	3 THEA 3720 Theatre History, Theory and Criticism III-Space	3
Elective ⁶	3 Elective ⁶	3
	16	16

Senior

Fall	Hours Spring	Hours
Core Fine Arts (except THEA 2010/17)	3 Core Social Science	3
Theatre Elective ⁷	1 THEA 4950 Theatre Literature and Theory Seminar	3
THEA 4980 Senior Capstone Project ^{1, 8}	3 Theatre Electives ⁶	6
Electives ⁶	6 Elective ⁶	2
	UNIV 4AA0 University Graduation	0
	13	14

Total Hours: 120

- ¹ THEA 1110 and THEA 4980 fulfill SLO 7.
- ² Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or Core Literature in the discipline not chosen as the sequence.
- ³ This must be a theatre design or technology course.
- ⁴ This course must be selected from THEA 2120 or THEA 2840.
- ⁵ One Core Humanities choice must cover SLO 3.
- ⁶ Students must meet with their advisers to determine approved theatre and other electives, unless approved courses are specified in this curriculum model.
- ⁷ This course must be in studio, lab, or practicum course.
- ⁸ To enroll in Senior Capstone Project, students must be senior theatre majors planning to graduate before the following fall semester.

BFA Curriculum in Theatre - Design/Technology

Theatre majors must earn a C or higher in theatre courses, or they must repeat those courses for credit toward their degrees.

Freshman

Fall	Hours Spring	Hours
ENGL 1100 English Composition I	3 ENGL 1120 English Composition II	3

Core History ¹	3 Core Social Science or Core History to complete the sequence ¹	3
Approved Humanities Choice ²	3 THEA 1110 Introduction to Theatre for Majors II ³	3
THEA 1010 Introduction to Theatre for Majors I	3 THEA 2310 Theatre Technology I	3
THEA 1910 Production Practicum I	1 THEA 2311 Theatre Technology I Lab	1
THEA 2610 Costume Construction	3 THEA 2400 Design Aesthetics	3
	16	16
Sophomore		
Fall	Hours Spring	Hours
Core Literature ¹	3 Core Science II	4
Core Science I	4 Core Humanities (except COMM 1000) or Core Literature to complete sequence ¹	3
THEA 2840 Beginning Dance Techniques	3 Core Social Science	3
THEA 2910 Production Practicum II	1 Elective ⁴	3
THEA 3200 Stage Management	3 THEA 2910 Production Practicum II	1
	THEA 3700 Theatre History, Theory and Criticism I-Text	3
	14	17
Junior		
Fall	Hours Spring	Hours
Core Fine Arts (excluding THEA)	3 Core Social Science	3
THEA 2120 Acting I	3 THEA 3510 Lighting Design	3
THEA 3410 Scene Design I	3 THEA 3640 Costume Design	3
THEA 3710 Theatre History, Theory and Criticism II-Body	3 THEA 3720 Theatre History, Theory and Criticism III-Space	3
THEA 3910 Production Practicum III	1 THEA 3910 Production Practicum III	1
	Core Math	3
	13	16
Senior		
Fall	Hours Spring	Hours
THEA 4980 Senior Capstone Project ^{3,5}	3 THEA 4950 Theatre Literature and Theory Seminar	3
Theatre Elective Emphasis A or B ⁶	3 THEA 4910 Production Practicum IV	1
THEA 4940 Theatre Special Projects	3 Theatre Electives Emphasis A or B ⁶	6
THEA 3950 Directing Seminar	3 Electives ⁴	3
Electives ⁴	3 UNIV 4AA0 University Graduation	0
	15	13
Total Hours: 120		

¹ Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or Core Literature course in the discipline not selected as the sequence.

² One Core Humanities choice must cover SLO 3.

³ THEA 1110 and THEA 4980 fulfill SLO 7.

- ⁴ Students must meet with their advisers to determine appropriate theatre electives and other electives.
- ⁵ To enroll in Senior Capstone Project, students must be senior theatre majors planning to graduate before the following fall semester.
- ⁶ Emphasis A includes THEA 3330, THEA 3420, and THEA 4420. Emphasis B includes THEA 3740, THEA 4650, and THEA 3610.

BFA Curriculum in Theatre - Management

Theatre majors must earn a C or higher in theatre courses, or they must repeat those courses for credit toward their degrees.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 Core Social Science or Core History to complete sequence ¹	3
Core History ¹		3 ENGL 1120 English Composition II	3
THEA 1910 Production Practicum I		1 THEA 1110 Introduction to Theatre for Majors II ²	3
PHIL 1040 Business Ethics		3 THEA 2310 Theatre Technology I	3
THEA 1010 Introduction to Theatre for Majors I		3 THEA 2311 Theatre Technology I Lab	1
THEA 2610 Costume Construction		3 THEA 2400 Design Aesthetics	3
	16		16

Sophomore

Fall	Hours	Spring	Hours
Core Literature ¹		3 Core Humanities (except COMM 1000) or Core Literature to complete sequence ¹	3
Core Science I		4 POLI 1090 American Government in Multicultural World	3
THEA 2840 Beginning Dance Techniques		3 Core Science II	4
THEA 2910 Production Practicum II		1 Theatre Elective ³	3
THEA 3200 Stage Management		3 THEA 2910 Production Practicum II	1
		THEA 3700 Theatre History, Theory and Criticism I-Text	3
	14		17

Junior

Fall	Hours	Spring	Hours
Core Fine Arts (excluding THEA)		3 Core Social Science	3
THEA 2120 Acting I		3 THEA 3520 Sound Design	3
THEA 3350 Technical Direction/Production Management		3 THEA 3720 Theatre History, Theory and Criticism III-Space	3
THEA 3710 Theatre History, Theory and Criticism II-Body		3 THEA 3910 Production Practicum III	1
THEA 3910 Production Practicum III		1 COMM 2410 Small Group Communication	3
POLI 3250 Introduction to Public Administration		3 THEA 3950 Directing Seminar	3
	16		16

Senior

Fall	Hours	Spring	Hours
Electives ³		3 Theatre Electives ³	3
THEA 4910 Production Practicum IV		1 THEA 4940 Theatre Special Projects	3
THEA 4980 Senior Capstone Project ^{1, 4}		3 POLI 5370 Nonprofit Management	3
Core Math		3 Electives ³	3
Theatre Electives ³		3 UNIV 4AA0 University Graduation	0
		13	12

Total Hours: 120

¹ Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or Core Literature in the discipline not chosen as the sequence.

² THEA 1110 and THEA 4980 fulfill SLO 7.

³ Students must meet with their advisers to identify approved theatre electives and other electives.

⁴ To enroll in Senior Capstone Project, students must be senior theatre majors planning to graduate before the following fall semester.

BFA Curriculum in Theatre - Music Theatre

Theatre majors must earn a grade of C or higher in theatre courses, or they must repeat those courses for credit toward their degrees.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
MUSI 1310 Music Theory I		² THEA 1110 Introduction to Theatre for Majors II ¹	3
MUSI 1320 Music Skills I		1 THEA 2120 Acting I	3
THEA 1010 Introduction to Theatre for Majors I		3 THEA 1910 Production Practicum I	1
THEA 2610 Costume Construction		3 Core Math	3
THEA 2110 Voice and Movement Fundamentals		2 MUAP 1630 Performance II	1
THEA 2111 Voice and Movement Fundamentals Lab		1	
MUAP 1530 Performance I		1	
		16	14

Sophomore

Fall	Hours	Spring	Hours
Core Science I		4 Core Science II	4
Core Social Science		3 THEA 1570 Dance Lab 1 - Ballet	1
THEA 1570 Dance Lab 1 - Ballet		1 THEA 3140 Music Theatre Acting	3
THEA 1670 Dance Lab 1 - Jazz		1 THEA 1670 Dance Lab 1 - Jazz	1
MUSI 1020 Piano Skills I - Rudiments		1 THEA 3700 Theatre History, Theory and Criticism I-Text	3
THEA 2310 Theatre Technology I		3 THEA 2910 Production Practicum II	1
THEA 2311 Theatre Technology I Lab		1 MUAP 2630 Performance IV	1

MUAP 2530 Performance III	1	
	15	14
Junior		
Fall	Hours Spring	Hours
Core Literature ²	3 Core Humanities (except COMM 1000) or Core Literature to complete sequence ²	3
THEA 2650 Stage Makeup (Core Literature)	3 THEA 3160 Bfa Performance Studio II	4
THEA 3150 BFA Performance Studio I	4 THEA 3730 Music Theatre History	3
THEA 3710 Theatre History, Theory and Criticism II-Body	3 MUAP 3630 Performance VI	1
MUAP 3530 Performance V	1 THEA 3910 Production Practicum III	1
THEA 3910 Production Practicum III	1 THEA 1530 Dance Lab 1 - Tap	1
	Core Social Science	3
	15	16
Senior		
Fall	Hours Spring	Hours
Core History ²	3 Core Social Science or Core History to complete sequence ²	3
Core Fine Arts (except THEA)	3 Approved Humanities Choice ³	3
THEA 4980 Senior Capstone Project ^{1, 4}	3 THEA 4160 BFA Performance Studio IV	4
THEA 4150 BFA Performance Studio III	4 Electives ⁵	3
Electives ⁵	3 Theatre or Music Electives ⁵	1
	UNIV 4AA0 University Graduation	0
	16	14

Total Hours: 120

- ¹ THEA 1110 and THEA 4980 fulfill SLO 7.
- ² Students are required to complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or Core Literature in the discipline not chosen as the sequence.
- ³ One Core Humanities choice must cover SLO 3.
- ⁴ To enroll in Senior Capstone Project, students must be senior theatre majors planning to graduate before the following fall semester.
- ⁵ Students must meet with their advisers to identify approved theatre, music, and other electives.

BFA Curriculum in Theatre - Performance

Theatre majors must earn a grade of C or higher in theatre courses or they must repeat those courses for credit toward their degrees.

Freshman

Fall	Hours Spring	Hours
ENGL 1100 English Composition I	3 ENGL 1120 English Composition II	3
THEA 1010 Introduction to Theatre for Majors I	3 THEA 1110 Introduction to Theatre for Majors II ¹	3
THEA 2610 Costume Construction	3 THEA 2120 Acting I	3
THEA 2840 Beginning Dance Techniques	3 THEA 2310 Theatre Technology I	3

THEA 2110 Voice and Movement Fundamentals	2 THEA 2311 Theatre Technology I Lab	1
THEA 2111 Voice and Movement Fundamentals Lab	1 Core Math	3
	15	16

Sophomore

Fall	Hours Spring	Hours
Core Science I	4 Core Science II	4
Core Literature ²	3 Core History ²	3
THEA 2910 Production Practicum II	1 THEA 2910 Production Practicum II	1
THEA 2650 Stage Makeup	3 THEA 3700 Theatre History, Theory and Criticism I-Text	3
Required Dance Elective ³	1 THEA 3120 Acting II	3
THEA 3110 Voice for the Actor II	3	
	15	14

Junior

Fall	Hours Spring	Hours
Core Social Science	3 Core Social Science or Core History to complete sequence ²	3
THEA 3150 BFA Performance Studio I	4 Core Humanities (except COMM 1000) or Literature to complete sequence ²	3
THEA 3840 Intermediate Dance Techniques I <i>or</i> 3860 Movement for the Actor	3 THEA 3160 Bfa Performance Studio II	4
THEA 3710 Theatre History, Theory and Criticism II-Body	3 THEA 3720 Theatre History, Theory and Criticism III-Space	3
THEA 3190 Singing Practicum	1 THEA 3910 Production Practicum III	1
THEA 3910 Production Practicum III	1	
	15	14

Senior

Fall	Hours Spring	Hours
Approved Humanities Choice ⁴	3 Core Fine Arts (except THEA 2010)	3
Electives ⁵	3 Electives ⁵	3
THEA 4150 BFA Performance Studio III	4 THEA 4160 BFA Performance Studio IV	4
THEA 4980 Senior Capstone Project ^{1, 6}	3 Theatre Electives ⁵	3
Theatre Electives ⁵	2 Core Social Science	3
	UNIV 4AA0 University Graduation	0
	15	16

Total Hours: 120

¹ THEA 1110 or THEA 4980 fulfill SLO 7.

² Students are required complete a two-course history sequence or a two-course literature sequence. They are also required to complete one Core History or one Core Literature in the discipline not selected as the sequence.

³ Dance electives include the following: THEA 1570, THEA 1670, THEA 1530. Acting may be substituted for the dance elective; students then should select either THEA 2940 or THEA 3940.

⁴ One Core Humanities choice must cover SLO 3.

- ⁵ Students must meet with their advisers to identify approved theatre and other elective courses.
- ⁶ To enroll in Senior Capstone Project, students must be senior theatre majors planning to graduate before the following fall semester.

Dance Minor

THEA 2840	Beginning Dance Techniques	3
THEA 3840	Intermediate Dance Techniques I	3
THEA 3850	Intermediate Dance Techniques II	3
THEA 4840	Advanced Dance Techniques	3
THEA 2310	Theatre Technology I	3
or THEA 2610	Costume Construction	
Total Hours		15

- ¹ Minimum 9 hours at 3000-level or above

Theatre Minor

THEA 2010	Introduction to Theatre	3
THEA 3700	Theatre History, Theory and Criticism I-Text	3
Elective courses: 6 of which must be 3000 level or above.		9
Total Hours		15

- ¹ Minimum 9 hours at 3000 level or above

Women's Studies Minor

Women's studies, an interdisciplinary minor, advances teaching, research and scholarship about women and women's perspectives. The minor sheds new light on existing knowledge of women and gender, integrates the study and voices of women into traditional disciplines, examines the impact of the social construction of gender and promotes change to improve women's, men's and children's lives.

WMST 2100	Introduction to Women's Studies	3
WMST 5980	Feminist Theory	3
Elective Courses - See the Director of Women's Studies and the program website for approved course listings.		12
Total Hours		18

- ¹ Students must complete a minimum 12 hours at 3000-level or above.
- ² <http://www.cla.auburn.edu/Womensstudies/womens-studies-minor/undergraduate-curriculum/>

Majors

Minors

Options

Engineering

This program provides for enrollment in the Liberal Arts Curriculum and in the Samuel Ginn College of Engineering. Two degrees will be awarded: a bachelor of arts degree in the liberal arts major and a bachelor's degree in the designated engineering field. Students should receive dual advising through the Colleges of Liberal Arts and Engineering. Typically, five to six academic years are necessary to complete dual requirements.

Pre-Law

Most majors and curricula are accepted as preparation for the study of law. Courses deemed useful, and which may be taken as electives, in majors, and in some cases to fulfill certain core requirements, are available from the pre-law program, located in 8030 E Haley Center, where students receive advice on preparing for law school admission and the study of law.

Pre-Health

Most majors and curricula in Liberal Arts are accepted as preparation for professional degrees in health, including advanced degrees from schools of medicine, dentistry, optometry, physical therapy, occupational therapy and others. Generally, particular courses in the sciences, mathematics and philosophy should be taken in the University Core. Additional sciences and mathematics may be needed as electives. The university's pre-health advisor, housed in the College of Sciences and Mathematics, should be consulted for elective and core course guidance and for assistance in applying to graduate/professional schools. The liberal arts advisor is available for all other matters related to the student's undergraduate studies.

School of Nursing

GREGG E. NEWSCHWANDER, *Dean*

JENNIFER SCHUESSLER, *Associate Dean*

THE SCHOOL OF NURSING, established in 1979, offers a program of study leading to the bachelor of science in nursing. The nursing curriculum prepares beginning professional nurse generalists who are capable of functioning as members of the healthcare team in providing care for individuals and groups in diverse settings. The program also provides an educational base for advancement in formal study, research and practice. The facilities and resources of the university are used to provide a broad academic background in the humanities and sciences. Graduates are eligible to make application to the NCLEX-RN examination to become registered nurses.

A pre-professional program in Nursing Science is required of students seeking admission to the professional curriculum. The first two years of course work are designated Pre-Nursing (PNUR). The Professional Curriculum requires five terms including 1-2 summer terms, depending on the semester of admission. The Curriculum includes classroom, laboratory and clinical experiences.

Admission

Freshman eligibility is determined by the Office of Enrollment Services. Admission requirements are stated elsewhere in this *Bulletin*. High school mathematics, chemistry and biology courses are strongly recommended, along with other college preparatory courses in social science, history, literature and English composition. Students are strongly encouraged to see the academic advisor in the School of Nursing on a regular basis.

Transfers from other institutions must apply through the Office of Enrollment Services. Review of transcripts by the School of Nursing will determine the amount of credit allowed for the pre-nursing requirements. Students may be considered for transfer into Pre-Nursing from another school on campus if they have an overall unadjusted GPA of at least 2.5 on all courses attempted at Auburn University. Students planning to transfer are encouraged to contact the School of Nursing as soon as possible for advisement on transfer of credits. Students must possess the functional ability to perform the skills and behaviors required of a professional nurse. These abilities include but are not limited to:

1. Adequate vision, such as that required to observe changes in physical conditions, to read small print on labels and markings on syringes, and to discern subtle changes in color;
2. Adequate hearing, such as that required to distinguish muted sounds through a stethoscope;
3. Fine motor skills and manual dexterity, such as that required to handle small, delicate equipment;
4. Strength to turn and assist with lifting adults, and to lift and carry children;
5. The mobility to respond quickly in emergency situations;
6. The ability to communicate and interact effectively with others, orally and in writing;

7. The ability to detect odors; and
8. The ability to read independently and to comprehend the written word.

Professional Program

Admission to the professional program occurs in both Fall and Spring. Pre-nursing students must formally apply for admission to the professional program, typically during the sophomore year, and meet the deadlines and requirements for each admission cycle. To be eligible for consideration for an interview and admission, applicants must have completed at least 3 of the 5 required science courses in the pre-nursing curriculum and have no more than 22 hours of pre-nursing coursework outstanding. Criteria considered for admission include unadjusted pre-nursing GPA, science GPA, number of hours completed at Auburn, successful completion (C or better) of all pre-nursing requirements and interview score. While the GPA to be considered for an interview is an overall unadjusted GPA of 2.5 or higher, interviews will be granted based on the overall unadjusted GPA of the pool of applicants and in reality a higher GPA may be required to interview. Applicants will be interviewed only once each academic cycle. If not accepted for admission at the time of their interview, applicants can reapply the next admission cycle by completing a reapplication form. In this case, the applicant's original interview score will be used. Due to limited enrollment, all students who meet minimum requirements may not be interviewed or admitted.

Application forms will be posted on the School of Nursing website by December 1 for Fall admission and March 1 for Spring admission. The deadline for completing an application is February 1 for fall admission and May 1 for spring admission. Interviews for fall admissions are the first Saturday in March and for spring admission the first or second Saturday in June. Students will be notified of admission decisions in writing by April 1 for fall admission and July 1 for spring admission. Those applicants admitted must successfully complete all pre-nursing courses and NURS 2020 with a C or higher by the end of summer semester for fall admissions and by the end of fall semester for spring admissions.

Application for RN Licensure

Following completion of the registered nursing program, the graduate will apply for RN Licensure in Alabama or another state. The Alabama Board of Nursing application has the following questions which must be answered by the applicant:

1. Have you ever been arrested or convicted of a criminal offense other than a minor moving traffic violation?
2. Have you within the last five years abused drugs/alcohol or been treated for dependency to alcohol or illegal chemical substances?
3. Have you ever been arrested or convicted for driving under the influence of drugs/alcohol?
4. Have you within the last five years received inpatient or outpatient treatment or been recommended to seek treatment for mental illness?
5. Have you ever had disciplinary action or is action pending against you by any state board of nursing?
6. Have you ever been placed on a state and/or federal abuse registry?
7. Have you ever been court-martialed/disciplined or administratively discharged by the military?

If an applicant has answered yes to any of the above questions, a full explanation with the appropriate court/treatment records must accompany the application. Applicants must disclose misdemeanors and arrests that didn't not result in convictions. Arrests/convictions include checks written on accounts with insufficient funds and DUIs.

If the Board later learns of arrests or convictions that have not been disclosed, this will be considered fraud and deceit in procuring a license, and disciplinary action will be forthcoming.

Applicants to the School of Nursing need to be aware that they may be denied permission to take the RN licensing examination by the Alabama Board of Nursing if they are not of good moral character. A past record of behavior such as a felony conviction, abuse of drugs or alcohol, or theft of drugs may be grounds for denial of licensure. See Section 610-X-8-.01 of the Alabama Board of Nursing Administrative Code.

Academic Regulations

Advanced placement credit in pre-nursing courses is granted according to university policies stated elsewhere in the *Bulletin*. No advanced standing is allowed in the natural sciences by the School of Nursing. Proficiency examinations or Advanced Placement (CEEB), with accepted score, may be used for advanced placement.

An overall GPA of 2.0 must be maintained for progression through the professional program. Pre-nursing students who do not attain an overall GPA of at least 2.5 at the end of their freshman year should consider alternative fields of study.

A minimum grade of C is required in pre-nursing courses. Transfer credit will not be granted for courses in which a grade less than C is earned.

In the professional program, a minimum grade of C must be achieved in all courses. Because the professional nursing curriculum is designed for progressive development of nursing knowledge and skills, students who earn a grade less than C in a professional program course are not allowed to progress to the next clinical course. The course in which the student earns a grade less than C may be repeated one time only. Students who earn a grade less than C in two or more professional program courses or whose GPA falls below a 2.0 will be dropped from the professional program and are not eligible for readmission. Transfer credit is not generally allowed for courses in the professional program.

The Professional Program

Facilities

The School of Nursing is housed in Miller Hall, where classrooms, a computer lab, an auditorium, The Attilio Corte Assessment laboratory and faculty offices are located. Facilities for clinical nursing experiences include East Alabama Medical Center and other hospitals in the area, Mental Health Centers, clinics, nursing homes, physicians' offices, Public Health Departments, public schools and industrial sites. Students are responsible for complying with policies and procedures required by agencies in which clinical work is done.

Expenses

Students accepted into the professional program should expect to incur additional expenses including a professional fee associated with the clinical courses. Uniforms, equipment, transportation to clinical sites, PDA's, exit exams, content exams, NCLEX reviews, a health examination and liability and health insurance coverage are among the requirements. Students are required to have a drug screening test and may be required to undergo a background check, depending on clinical agency policy. The costs of such requirements will be the responsibility of the students. Detailed information is furnished by the dean's office at the time of admission.

Accreditation

The School of Nursing operates with full approval of the Alabama Board of Nursing and is fully accredited by the Commission on Collegiate Nursing Education, One Dupont Circle NW, Suite 530, Washington, DC 20036-1120, (202) 887-6791, www.aacn.nche.edu/accreditation/ (<http://www.aacn.nche.edu/accreditation/>).

Program

- Nursing - Traditional (https://nextbulletin.auburn.edu/undergraduate/schoolofnursing/nursingtraditional_major)

Program

- Nursing - MSN (p. 525)

Curriculum in Nursing - Traditional

Freshman

Fall	Hours	Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory		4 CHEM 1030 Fundamentals Chemistry I & CHEM 1031 Fundamental Chemistry I Laboratory	4
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
MATH 1120 Pre-Calculus Algebra		3 Core History	3
Social Science Core		3 Social Science Core	3
Core Fine Arts		3 HDFS 2010 Lifespan Human Development in Family Context or PSYC 3120 Developmental Psychology	3
	16		16

Sophomore

Fall	Hours	Spring	Hours
Core Lit I		3 Core Lit II	3
BIOL 2500 Human Anatomy and Physiology I		4 BIOL 2510 Human Anatomy and Physiology II	4
BIOL 3200 General Microbiology		4 PHIL 1020 Introduction to Ethics or 1030 Ethics and the Health Sciences	3
NTRI 2000 Nutrition And Health		3 STAT 2510 Statistics for Biological and Health Sciences	3
		PSYC 2010 Introduction to Psychology or SOCY 1000 Sociology Global Perspective	3
		14	16

Total Hours: 62

Fall Admissions**Junior**

Summer	Hours	Fall	Hours
NURS 2020 Professional Nursing: the Foundation of Health Care		2 NURS 3110 Theoretical Concepts of Professional Nursing Practice	3
		NURS 3130 Evidence Based Skills, Assessment, and Health Promotion	4
		NURS 3141 Concepts and Evidence Based Skills for Professional Clinical Practice	3
		BIOL 3120 Nursing Pathophysiology	3

Junior

Spring	Hours	Summer	Hours
NURS 3210 Clinical Pharmacology		2 NURS 3330 Professional Nursing Concepts in the Childbearing Family and Reproductive Health	4
NURS 3220 Evidence Based Practice		2 NURS 3331 Professional Nursing Concepts in the Childbearing Family and Reproductive Health - Clinical	2
NURS 3230 Professional Nursing Concepts: Acute Care Across the Lifespan		6 NURS 3340 Professional Nursing Concepts Across Populations	3
NURS 3231 Professional Nursing Concepts: Acute Care Across the Lifespan - Clinical		4 NURS 3341 Professional Nursing Concepts Across Populations Clinical	3

Senior

Fall	Hours	Spring	Hours
NURS 4230 Professional Nursing Concepts: Chronic and Complex Conditions		5 NURS 4910 Professional Nursing Leadership in Complex Systems	3
NURS 4231 Professional Nursing Concepts: Chronic and Complex Conditions - Clinical		5 NURS 4911 Leadership Practicum	2
NURS 4810 Professional Nursing Leadership in Microsystems		2 NURS 4920 Transitions to Professional Nursing	2

Elective (optional-major)	0-2 NURS 4921 Nursing Practice Preceptorship	5
	UNIV 4AA0 University Graduation	0

Spring Admission

Junior

Fall	Hours Spring	Hours
NURS 2020 Professional Nursing: the Foundation of Health Care	2 NURS 3110 Theoretical Concepts of Professional Nursing Practice	3
	NURS 3130 Evidence Based Skills, Assessment, and Health Promotion	4
	NURS 3141 Concepts and Evidence Based Skills for Professional Clinical Practice	3
	BIOL 3120 Nursing Pathophysiology	3

Junior

Summer	Hours Fall	Hours
NURS 3210 Clinical Pharmacology	2 NURS 3220 Evidence Based Practice	2
NURS 3230 Professional Nursing Concepts: Acute Care Across the Lifespan	6 NURS 3330 Professional Nursing Concepts in the Childbearing Family and Reproductive Health	4
NURS 3231 Professional Nursing Concepts: Acute Care Across the Lifespan - Clinical	4 NURS 3331 Professional Nursing Concepts in the Childbearing Family and Reproductive Health - Clinical	2
	NURS 3340 Professional Nursing Concepts Across Populations	3
	NURS 3341 Professional Nursing Concepts Across Populations Clinical	3
	Elective Optional Major	0-2

Senior

Spring	Hours Summer	Hours
NURS 4230 Professional Nursing Concepts: Chronic and Complex Conditions	5 NURS 4910 Professional Nursing Leadership in Complex Systems	3
NURS 4231 Professional Nursing Concepts: Chronic and Complex Conditions - Clinical	5 NURS 4911 Leadership Practicum	2
NURS 4810 Professional Nursing Leadership in Microsystems	2 NURS 4920 Transitions to Professional Nursing	2
	NURS 4921 Nursing Practice Preceptorship	5
	UNIV 4AA0 University Graduation	0

TOTAL HOURS - 127-129

Curriculum guides for the junior and senior year vary according to semester of admission to professional program.

* Students may be enrolled in selected pre-nursing courses while taking NURS 2020

James Harrison School of Pharmacy

R. LEE EVANS, *Dean*

PAUL JUNGnickel, *Associate Dean for Academic and Student Affairs*

DAVID RIESE, *Associate Dean for Research and Graduate Programs*

KAREN MARLOWE, *Assistant Dean for Mobile Campus*

KIMBERLY BRAXTON-LLOYD, *Assistant Dean for Health Services*

THE AUBURN Doctor of Pharmacy (PharmD) degree program is a four-year course of study that requires the completion of the pre-pharmacy curriculum prior to enrollment. The curriculum is designed to facilitate the development of those abilities necessary for entry-level practitioners in various practice settings. Consistent with accreditation standards and guidelines, the curriculum provides an appropriate balance of course work in the following areas: biomedical sciences (basic and clinical); pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; pharmacy practice; and pharmacy practice experience. The goal of the curriculum is to prepare students who can provide pharmaceutical care and are life-long learners. To accomplish this, the curriculum involves students in continuous patient care responsibilities starting upon entry into the School. Students also participate as active, self-directed learners in interdisciplinary teaching models.

Admission

Course requirements for admission to the James Harrison School of Pharmacy may be satisfied by completing the Pre-Professional Curriculum in the College of Sciences and Mathematics. Any or all of these requirements may be met by transfer of appropriate credit from other institutions.

Admission is limited and is contingent upon available facilities and faculty. To be considered for admission the applicant must have a satisfactory GPA and satisfactory scores on the Pharmacy College Admissions Test (PCAT). A grade of D in any prerequisite course will not be accepted. Students are matriculated into the James Harrison School of Pharmacy only during fall semester. All pre-pharmacy course work must be completed by the end of the summer term before the professional program begins at the start of fall semester.

Applicants must apply to the James Harrison School of Pharmacy through the Pharmacy College Application Service (PharmCAS) and must also complete the School's Supplemental Application. The James Harrison School of Pharmacy admits students using a rolling admissions process and student applications are prioritized in the order in which they are received. The final deadline for receipt of all application materials is March 1. Students who are successful in meeting the school's initial screening criteria are required to come to the campus for a personal interview in order to be further considered for admission.

The James Harrison School of Pharmacy's Doctor of Pharmacy Program admits students to two campuses: the main Auburn Campus and the Mobile Campus located at the University of South Alabama. Students may express a preference for a specific campus, but assignments are made based on available space. Admitted students are notified of their campus assignment at the time an offer of admission is made.

Prospective students may obtain application materials and information, which further outlines policies and procedures, from the school's website at www.pharmacy.auburn.edu or by contacting the Office of Academic and Student Affairs, 2316 Walker Building, Auburn, AL 36849-5501. Applications through PharmCAS are submitted online at www.pharmcas.org (<http://www.pharmcas.org>).

Admission Requirements

Fall	Hours Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4 CHEM 1040 Fundamental Chemistry II	3
CHEM 1030 Fundamentals Chemistry I	3 CHEM 1041 Fundamental Chemistry II Laboratory	1
CHEM 1031 Fundamental Chemistry I Laboratory	1 ENGL 1120 English Composition II	3
ENGL 1100 English Composition I	3 PHIL 1030 Ethics and the Health Sciences	3
Literature	3 Additional Humanities	3
MATH 1610 Calculus I	4 Core Fine Arts	3
PHYS 1500 General Physics I	4 Core History	3
Core History	3 CHEM 2080 Organic Chemistry II	3
CHEM 2070 Organic Chemistry I	3 CHEM 2081 Organic Chemistry II Laboratory	1
CHEM 2071 Organic Chemistry I Laboratory	1 STAT 2510 Statistics for Biological and Health Sciences	3

BIOL 2500 Human Anatomy and Physiology I	4 BIOL 2510 Human Anatomy and Physiology II	4
BIOL 3200 General Microbiology	4 BIOL 3020 Genomic Biology ²	4
BIOL 5600 Mammalian Physiology (Biomedical Physiology)	6 BCHE 3200 Principles of Biochemistry	3
Core Social Science	³ BIOL 3500 Perspectives in Immunology ³	3
	Core Social Science	3
	46	43

Total Hours: 89

¹ New admission requirements were effective Fall Semester 2010 and thereafter

² BIOL 3000 can be substituted for BIOL 3020

³ BIOL 5500 can be substituted for BIOL 3500

Doctor of Pharmacy

P1

Fall	Hours Spring	Hours
PYDI 5000 Drugs and Diseases I	5 PYDI 5100 Drugs and Diseases II	5
PYDI 5020 Contemporary Aspects of Pharmacy Practice I	2 PYDI 5120 Contemporary Aspects of Pharmacy Practice II	2
PYDI 5080 Foundations of Pharmacy	1 PYDI 5130 Drug Literature Evaluation	2
PYDI 5090 Pharmacy Practice Experience I	2 PYDI 5140 Principles of Pharmacokinetics	3
PYPC 5010 Patient Centered Skills	2 PYDI 5190 Pharmacy Practice Experience II	2
	PYPC 5110 Pharmacy Law and Ethics	2
	12	16

Total Hours: 28

P2

Fall	Hours Spring	Hours
PYDI 5200 Drugs and Diseases III	8 PYDI 5300 Drugs and Diseases IV	8
PYDI 5220 Contemporary Aspects of Pharmacy Practice III	2 PYDI 5320 Contemporary Aspects of Pharmacy Practice IV	2
PYDI 5290 Pharmacy Practice Experience III	2 PYDI 5390 Pharmacy Practice Experience IV	2
PYPC 5210 Pharmacy Practice Development, Management, and Evaluation I	3 PYPC 5310 Pharmacy Practice Development, Management, and Evaluation II	3
PYPS 5230 Drug Products I	3 PYPS 5330 Drug Products II	3
	18	18

Total Hours: 36

P3

Fall	Hours Spring	Hours
PYDI 5420 Contemporary Aspects of Pharmacy Practice V	2 PYDI 5520 Contemporary Aspects of Pharmacy Practice VI	2
PYDI 5470 Integrated Pharmacotherapy I	6 PYDI 5570 Integrated Pharmacotherapy III	6

PYDI 5480 Integrated Pharmacotherapy II	6	PYDI 5580 Integrated Pharmacotherapy IV	6
PYDI 5490 Pharmacy Practice Experience V	2	PYDI 5590 Pharmacy Practice Experience Vi	2
Professional Electives ²	2	Professional Electives ²	2
	18		18

Total Hours: 36

P4¹

Fall	Hours
PYPP 5610 Community Pharmaceutical Care	5
PYPP 5620 Medicine I	5
PYPP 5640 Primary/Ambulatory Care I	5
PYPP 5650 Primary/Ambulatory Care II	5
PYPP 5660 Health System Practice	5
PYPP 5670 Practice Elective I	5
PYPP 5680 Practice Elective II	5
PYPP 5600 Drug Information-Selective or 5630 Medicine II - Selective	5
PYPP 5690 Professional Seminar	1
PYPP 5700 Advanced Practice Experience Professional Communication	0
UNIV 4AA0 University Graduation	0
	41

Total Hours: 41

¹ P4 Rotations begin in May and are completed the following April.

² Students must reach 3rd year PYDI standing before completing professional electives.

Academic Performance Standards

The implementation of all guidelines will be in addition to those existing policies and standards of the University.

To remain in good standing, students are required to achieve a James Harrison School of Pharmacy GPA of at least 2.25. GPAs will be calculated only from professional course work, which is defined as core pharmacy courses approved by the faculty and listed in the Doctor of Pharmacy curriculum.

The James Harrison School of Pharmacy students with semester or cumulative GPAs below 2.25, or who receive Ds and Fs in required courses, may be dismissed from the James Harrison School of Pharmacy or required to undergo a remedial plan of study as directed by the Committee on Academic Requirements and Professionalism. The remedial plan of study may require students to retake courses in which they received grades of less than C. Policies concerning academic progression, probation, and dismissal are specified in the James Harrison School of Pharmacy's Academic Performance Standards. A copy of the Standards may be obtained from the James Harrison School of Pharmacy's Office of Academic and Student Affairs or from the School's website.

Students must observe pre-requisites and co-requisites stated in the current *Auburn University Bulletin*. A pre-requisite statement denoting “_ -year PYDI standing” indicates that the student must have passed all courses in the prior year of the curriculum.

Any student in the pharmacy curriculum who is subject to academic suspension and desires to re-enter the James Harrison School of Pharmacy must, in addition to complying with the pertinent university regulations, be approved by the James Harrison School of Pharmacy's Committee on Admissions.

Notes:

- Students are required to file an application with the Alabama State Board of Pharmacy for registration as an intern at the time they are enrolled in the James Harrison School of Pharmacy. Information and intern registration forms may be obtained from the Alabama State Board of Pharmacy, 111 Village Street, Hoover, AL 35242, or at www.albop.com (<http://www.albop.com>). Students must maintain a valid Alabama Internship License as a condition of continued enrollment in the James Harrison School of Pharmacy.
- Upon entering pharmacy school, and at the beginning of each academic year, students are required to furnish documentation of professional liability insurance, current CPR and First Aid certification, personal medical insurance and up-to-date immunizations.
- Pharmacy students are required to attend the Professional Seminar Series.
- The Office of Academic and Student Affairs will provide a list of courses that are approved for professional elective credit. Students may not receive credit for taking professional electives until they reach third professional year standing in the James Harrison School of Pharmacy.
- Students in the Doctor of Pharmacy program are required to own a laptop computer that meets the school's specifications. Questions about computer specifications should be directed to the School's Office of Information Technology. Computer literacy must be demonstrated upon entry to pharmacy school.
- Students having appropriate qualifications and pre-requisites may be able to take graduate course work while enrolled in the Doctor of Pharmacy program.
- Students are required to adhere to all of the James Harrison School of Pharmacy's codes, policies, and professional requirements. The School will take disciplinary action against those students who violate such codes, policies, and professional requirements.
- Students will be required to periodically take examinations to assess their ability to integrate the knowledge, skills, and attitudes learned to date. Students may be required to complete remedial course work should their performance be unsatisfactory.
- Consistent with the policies of Auburn University, The James Harrison School of Pharmacy reserves the right to make changes at any time in its academic programs, codes, policies, and professional requirements.
- Students will be notified of their site assignments for the Advanced Practice Experiences at the earliest feasible time, to enable them to make housing arrangements. Rotation sites are located throughout Alabama, western Georgia and the Florida panhandle. Although students may request specific sites, each site has a limited enrollment and students may be assigned to sites they do not request. Students are responsible for procuring housing, including the assessment of its safety and living conditions (e.g., privacy and single-sex housing). Students are also responsible for housing and other living expenses incurred when assigned to rotation sites away from the Auburn campus.

Programs

- Pharmacal Sciences - MS, PhD (p. 530)
- Pharmaceutical Sciences - PhD (p. 532)
- Pharmacy Care Systems - MS, PhD (p. 532)

College of Sciences and Mathematics

CHARLES E. SAVRDA, *Interim Dean*

VINCE CAMMARATA, *Associate Dean for Academic Affairs*

CHRIS RODGER, *Associate Dean for Research*

THE COLLEGE OF SCIENCES AND MATHEMATICS provides programs in the physical sciences, life sciences, and mathematics at the undergraduate and graduate levels. The college also offers scientific and mathematical service courses for students enrolled in all of the other colleges and schools. The college includes the departments of Biological Sciences, Chemistry and Biochemistry, Geology and Geography, Mathematics and Statistics, and Physics. The Arboretum and the Leach Science Center are also included in the College of Sciences and Mathematics.

Undergraduate Degrees

1. Four-year bachelor's degree programs are offered in two areas:
 - A. Departmental curricula are available in biomedical sciences, botany, chemistry, biochemistry, geography, geology, laboratory and medical technology, microbiology, molecular biology, marine biology, mathematics, applied mathematics, physics and zoology.

- B. Pre-professional curricula are offered in pre-dentistry, pre-medicine, pre-optometry, pre-physical therapy, pre-pharmacy, and pre-veterinary medicine.

Embodied in these curricula are the requirements of the University Core Curriculum.

2. Admission - The academic requirements and demands on majors in sciences and mathematics necessitate a high school preparation of high intellectual quality. The following courses are recommended as minimum preparation: English, four units; mathematics (including algebra, geometry, trigonometry and pre-calculus), four units; chemistry, one unit; biology, one unit; history, literature, social science, two or three units. Both physics and foreign language are highly recommended.

COSAM curricula require students to begin with .

Students not prepared for MATH 1610 must first take a lower-numbered course. See advisor for details.

On-campus transfers may declare a major in the College of Sciences and Mathematics if they: (1) have a cumulative Auburn grade-point average of at least 2.0 (on all work attempted) and (2) have completed at least 10 hours of Auburn University course work in the desired major with at least a 2.0 grade-point average in all such courses. Courses in the major are those carrying the appropriate prefix(es) of the specific curriculum. Students not meeting these standards may enroll in the Undeclared Sciences and Mathematics (UNSM) curriculum if they have not reached senior standing. Students in the UNSM curriculum may declare a Sciences and Mathematics major after satisfying the above requirements. A student who enters the UNSM curriculum because he or she is not qualified to declare a major can remain in UNSM for a maximum of one year or until senior standing is reached. After this, if the student is still not qualified to declare a major, he or she will be disenrolled from the College of Sciences and Mathematics.

Graduate Degrees

Master of science and doctor of philosophy degrees are offered in the College of Sciences and Mathematics. Degree programs are described in this *Bulletin*.

Web Page

Additional information about the College of Sciences and Mathematics can be found at: <http://www.auburn.edu/cosam/>.

General Sciences and Mathematics Curriculum (UNSM)

This curriculum is primarily for freshmen who have not decided on a specific major field of study and for transfer students having deficiencies which preclude their acceptance in a degree program. Freshmen entering this curriculum must declare a major by the end of their first year. Transfer students must complete a specific approved program to clear their admission to a major field of study.

The General Curriculum (UNSM)

Freshman

Fall	Hours
MATH 1610 Calculus I	4
ENGL 1100 English Composition I	3
Science	4
Core Social Science	3
Career Exp	2

Sophomore

Spring	Hours
Science	4
Core Social Science	3
Elective	2
MATH 1620 Calculus II	4
ENGL 1120 English Composition II	3

Departmental Curricula

Departmental curricula leading to the bachelor's degree include botany, chemistry, biochemistry, biomedical sciences, geography, geology, microbiology, molecular biology, marine biology, laboratory and medical technology, mathematics, applied mathematics, physics and zoology.

Majors

- Actuarial Science (p. 386)
- Applied Discrete Mathematics (p. 388)
- Applied Mathematics (p. 389)
- BA Chemistry (p. 376)
- BS Chemistry (p. 377)
- Biochemistry (p. 379)
- Biomedical Sciences (p. 394)
- Geography (p. 382)
- Geology (p. 383)
- Laboratory Technology (p. 380)
- Marine Biology (p. 368)
- Mathematics (p. 385)
- Medical Technology (p. 381)
- Microbial, Cellular and Molecular Biology Microbiology Option (MCMB) (p. 372)
- Microbial, Cellular and Molecular Biology Cell & Molecular Biology Option (MCCM) (p. 371)
- Microbiology/Pre-Veterinary Medicine Option (p. 395)
- Organismal Biology - Conservation & Biodiversity Option (p. 374)
- Organismal Biology - Ecology, Evolution & Behavior Option (p. 373)
- Organismal Biology - Integrated Biology Option (p. 370)
- Organismal Biology - Pre Veterinary Medicine Option (p. 398)
- Physics (p. 391)
- Pre-Dentistry and Pre-Medicine (p. 396)
- Pre-Optometry (p. 399)
- Pre-Pharmacy (p. 400)
- Pre-Physical Therapy (p. 401)
- Pre-Veterinary Medicine (p. 397)

Minors

- Mathematics (p. 386)
- Statistics (p. 390)
- Physics (p. 392)

Program

- Biological Sciences - MS, PhD (p. 487)
- Biomedical Sciences - MS, PhD (p. 487)
- Chemistry and Biochemistry - MS, PhD (p. 491)
- Geography - MS (p. 513)
- Geology - MS (p. 514)
- Mathematics and Statistics - MS, MME, PhD (p. 524)
- Physics - MS, PhD (p. 532)

- Statistics - MS, MPS (p. 547)
- Zoology (p. 547)

Biological Sciences

Marine Biology

The Marine Biology major provides students with a strong foundation in basic biological concepts such as genetics, ecology, cell biology and marine systems as well as chemistry and mathematics. The plan of study provides the opportunity to choose elective courses from a wide variety of courses offered at Auburn University. In addition, students are required to take summer courses offered at marine labs around the United States, including Dauphin Island Sea Lab and Gulf Coast Research Lab. Students are also encouraged to consider internships and undergraduate research. Marine Biology graduates are well-prepared for advanced study in any marine science area or employment with marine labs, various governmental and nongovernmental agencies involved with coastal management and conservation, and tourism.

Microbial, Cellular and Molecular Biology

The Microbial, Cellular and Molecular Biology major provides students with an excellent foundation in the areas of microbiology, cellular and molecular biology that emphasizes the understanding of life at the cellular and molecular level. The choice of a formal option within the major allows students to concentrate on a particular area of interest. Each option provides a wide variety of courses and opportunities for undergraduate research. Students selecting the Microbiology option will be well prepared for postgraduate work or career advancement in a number of areas including food, environmental and medical microbiology. Students selecting the Cell and Molecular Biology option would also be well prepared for postgraduate study or career advancement in any area of eukaryotic cell or molecular biology. Both options provide excellent preparation for students interested in biotechnology or professional programs in the health sciences.

Organismal Biology

The Organismal Biology major provides students with a solid foundation in basic biological concepts, such as evolution, ecology, genetics and cell biology and also provides a foundation in physics, chemistry and mathematics. The three formal options within the major allow students to specialize in various ways, while focusing on the study of plants or animals through the choice of elective courses. The major provides a solid foundation for pursuing graduate degrees (M.S. or Ph.D.) in biological fields, but also prepares students for a wide range of laboratory and field-based research positions in environmental resource assessment, management and conservation within federal, state and private agencies or organizations.

Majors

- Marine Biology (p. 368)
- Microbial, Cellular and Molecular Biology Microbiology Option (MCMB) (p. 372)
- Microbial, Cellular and Molecular Biology Cell & Molecular Biology Option (MCCM) (p. 371)
- Microbiology/Pre-Veterinary Medicine Option (p. 395)
- Organismal Biology - Conservatoin & Biodiversity Option (p. 374)
- Organismal Biology - Ecology, Evolution & Behavior Option (p. 373)
- Organismal Biology - Integrated Biology Option (p. 370)

Curriculum in Marine Biology

Freshman

Fall	Hours	Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3

MATH 1610 Calculus I	4	Core Social Science ²	3
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
	15		14

Sophomore

Fall	Hours	Spring	Hours	Summer	Hours
Core Literature	3	BIOL 3040 Biology of Marine Systems	3	SUMMER MARINE LAB ⁶	8
PHYS 1500 General Physics I	4	PHYS 1510 General Physics II	4		
Core History	3	BIOL 3060 Ecology	4		
BIOL 3000 Genetics	4	CHEM 2030 Survey of Organic Chemistry	3		
	14		14		8

Junior

Fall	Hours	Spring	Hours	Summer	Hours
Core History or Literature ¹	3	BIOL 3200 General Microbiology	4	SUMMER MARINE LAB ⁶	8
BIOL 3030 Evolution and Systematics	3	BIOL 4100 Cell Biology	3		
BIOL 4010 Invertebrate Biodiversity	4	STAT 2510 Statistics for Biological and Health Sciences	3		
BCHE 3200 Principles of Biochemistry	3	Core Social Science or Humanities ³	3		
	13		13		8

Senior

Fall	Hours	Spring	Hours
Core Humanities (Philosophy) ⁴	3	BIOL 4950 Undergraduate Seminar	1
Core Fine Arts	3	Biology Elective ⁵	3
BIOL Physiology Elective ⁵	4	Molecular Biology Elective ⁵	3
BIOL Ecology & Evol. Elective ⁵	3	Core Social Science ²	3
		UNIV 4AA0 University Graduation	0
	13		10

Total Hours: 122

¹ Students must complete a two-course sequence in either HIST or LIT (for example, World History 1 and 2 or American Lit 1 and 2). For complete HIST and LIT sequence options, see the *Bulletin*.

² Students who complete a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.

³ If a LIT sequence is chosen, this course must be a CORE SOCIAL SCIENCE. If a HIST sequence is chosen, this course must be a CORE HUMANITIES.

⁴ Choose from PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090, PHIL 1100 or HONR 1007 or HONR 1017.

⁵ See list of approved Biology electives.

⁶ All courses taken at a Summer Marine Lab must receive departmental approval.

Curriculum in Organismal Biology-Integrative Biology Option

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
CHEM 1030 Fundamentals Chemistry I	3	Core History	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1040 Fundamental Chemistry II	3
MATH 1610 Calculus I	4	CHEM 1041 Fundamental Chemistry II Laboratory	1
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
	15		14

Sophomore

Fall	Hours	Spring	Hours
CHEM 2070 Organic Chemistry I	3	CHEM 2080 Organic Chemistry II	3
CHEM 2071 Organic Chemistry I Laboratory	1	CHEM 2081 Organic Chemistry II Laboratory	1
Core Social Science ²	3	Core History Or Literature ¹	3
Core Literature	3	BIOL 3000 Genetics	4
BIOL 3060 Ecology	4	BIOL 3030 Evolution and Systematics	3
	14		14

Junior

Fall	Hours	Spring	Hours
PHYS 1500 General Physics I	4	PHYS 1510 General Physics II	4
BCHE 5180 Biochemistry I	3	BCHE 5190 Biochemistry II	3
BCHE 5181 Biochemistry I Laboratory	1	BCHE 5191 Biochemistry II Laboratory	1
Core Social Science ²	3	Core Humanities (Philosophy) ⁴	3
BIOL 3100, 3200, 4010, Or 4020 ⁵	4	Core Social Science or Humanities ⁴	3
		BIOL 4100 Cell Biology	3
	15		17

Senior

Fall	Hours	Spring	Hours
Core Fine Arts	3	Physiology Elective ⁶	4
Eco/Evo/Diversity Electives ⁶	7	Cell/Mol/Micro Electives ⁶	7
Cell/Mol/Micro Electives ⁶	4	BIOL 4950 Undergraduate Seminar	1
Biology Elective ⁷	3	Biology Elective ⁷	4
		UNIV 4AA0 University Graduation ⁸	0
	17		16

Total Hours: 122

- ¹ Students must complete a two-course sequence in either HIST or LIT (for example, World History 1 and 2 or American Lit 1 and 2). For complete HIST and LIT sequence options, see the *Bulletin*.
- ² Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.
- ³ If a LIT sequence is chosen, this course must be a CORE SOC SCI. If a HIST sequence is chosen, this course must be a CORE HUMANITIES.
- ⁴ Choose from PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090, PHIL 1100 or HONR 1007 or HONR 1017.
- ⁵ This elective in the junior year should be chosen with consideration of the elective courses to be taken in the senior year. Consult your faculty advisor.
- ⁶ A list of approved electives is available from the COSAM Student Services webpage.
- ⁷ Any BIOL course listed on the Organismal Biology electives list may be used as a Biology elective.
- ⁸ This course must be taken the semester of graduation.

Microbial, Cellular & Molecular Biology Cell & Molecular Biology Option

Freshman

Fall	Hours	Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
	15		15

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Core History	3
PHYS 1500 General Physics I	4	PHYS 1510 General Physics II	4
CHEM 2070 Organic Chemistry I	3	CHEM 2080 Organic Chemistry II	3
CHEM 2071 Organic Chemistry I Laboratory	1	CHEM 2081 Organic Chemistry II Laboratory	1
BIOL 3000 Genetics	4	BIOL 3200 General Microbiology	4
	15		15

Junior

Fall	Hours	Spring	Hours
Core History or Literature ¹	3	Core Social Science or Humanities ³	3
BIOL 4100 Cell Biology	3	Core Fine Arts	3
BIOL 4101 Cell Biology Laboratory	2	BIOL 5220 Introductory Molecular Genetics	3
CMBL Elective ⁵	3	BIOL 5521 Gene Expression and Recombinant DNA Laboratory	2
BCHE 5180 Biochemistry I	3	BCHE 5190 Biochemistry II	3
BCHE 5181 Biochemistry I Laboratory	1	Elective	2
	15		16

Senior

Fall	Hours	Spring	Hours
Core Social Science ²		³ Core Social Science ²	3
Evolution Elective ⁵		³ CMBL Elective ⁵	3
CMBL Elective ⁵		3 BIOL 4950 Undergraduate Seminar	1
Biodiversity Electives		3 Physiology Electives	3
Core Humanities (Philosophy) ⁴		3 MCMB Electives	6
		UNIV 4AA0 University Graduation	0
		15	16

 Total Hours: 122

- ¹ Students must complete a two-course sequence in either HIST or LIT (for example, World History 1 and 2 or American Lit 1 and 2). For complete HIST and LIT sequence options, see the *Bulletin*.
- ² Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.
- ³ If a LIT sequence is chosen, this course must be a CORE SOC SCI. If a HIST sequence is chosen, this course must be a CORE HUMANITIES.
- ⁴ Choose from PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090, PHIL 1100.
- ⁵ Approved Biology electives are on the back of this sheet.

Microbial, Cellular & Molecular Biology Microbiology Option

Freshman

Fall	Hours	Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory		4 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
CHEM 1030 Fundamentals Chemistry I		3 CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory		1 CHEM 1041 Fundamental Chemistry II Laboratory	1
MATH 1610 Calculus I		4 MATH 1620 Calculus II	4
		15	15

Sophomore

Fall	Hours	Spring	Hours
Core Literature		3 Core History	3
PHYS 1500 General Physics I		4 PHYS 1510 General Physics II	4
CHEM 2070 Organic Chemistry I		3 CHEM 2080 Organic Chemistry II	3
CHEM 2071 Organic Chemistry I Laboratory		1 CHEM 2081 Organic Chemistry II Laboratory	1
BIOL 3000 Genetics		4 BIOL 3200 General Microbiology	4
		15	15

Junior

Fall	Hours	Spring	Hours
Core History or Lit ¹		³ Core Social Science ²	3

BCHE 5180 Biochemistry I	3 Core Fine Arts	3
BCHE 5181 Biochemistry I Laboratory	1 BIOL 4100 Cell Biology	3
BIOL 4200 Clinical Microbiology	4 BCHE 5190 Biochemistry II	3
BIOL 5260 Prokaryotic Molecular Genetics	3 BIOL 5521 Gene Expression and Recombinant DNA Laboratory	2
	Electives	2
	14	16

Senior

Fall	Hours	Spring	Hours
Core Social Science or Humanities ³	3	Core Social Science ²	3
Core Humanities (Philosophy) ⁴	3	BIOL 4950 Undergraduate Seminar	1
BIOL 5250 Microbial Evolution and Diversity	4	BIOL 5210 Microbial Physiology	3
MICR Electives ⁵	6	MICR Electives ⁵	3
		MCMB/MCCM Electives ⁵	6
		UNIV 4AA0 University Graduation	0
	16		16

Total Hours: 122

- ¹ Students must complete a two-course sequence in either HIST or LIT (for example, World History 1 and 2 or American Lit 1 and 2). For complete HIST and LIT sequence options, see the *Bulletin*.
- ² Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.
- ³ If a HIST sequence is chosen, this course must be a CORE HUMANITIES.
- ⁴ Choose from PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090, PHIL 1100.
- ⁵ Core Science: One of the sequences PHYS 1600/PHYS 1610, BIOL 1020/BIOL 1030, CHEM 1030/CHEM 1040 with labs, or GEOL 1100/GEOL 1110.

Biology Electives: See advisor for approved course listing.

Organismal Biology - Ecology, Evolution, and Behavioral Option

Freshman

Fall	Hours	Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
	15		15

Sophomore

Fall	Hours	Spring	Hours
Core Social Science ²	3	Core History ¹	3

PHYS 1000 Foundations of Physics	4 Core Social Science ²	3
Core Fine Arts	3 CHEM 2030 Survey of Organic Chemistry	3
Core Literature	3 BIOL 3030 Evolution and Systematics	3
BIOL 3000 Genetics	4 BIOL 3060 Ecology	4
	17	16

Junior

Fall	Hours Spring	Hours
Biology Elective ⁶	3 BIOL 5130/5131 or 5210 or 5240	4
BIOL 3200, 4010, 4020, 3100 ⁵	4 Core Social Science or Humanities ³	3
Core Humanities (Philosophy) ⁴	3 Free Elective	3
Core Literature or History ¹	3 STAT 2510 Statistics for Biological and Health Sciences	3
BIOL 4100 Cell Biology	3 BIOL 5370 Molecular Ecology	3
	16	16

Senior

Fall	Hours Spring	Hours
Cell/Mol/Micro Elective or Physiology Elective ⁶	8 Eco/Evo/Diversity Electives ⁶	7
Eco/Evo/Diversity Elective ⁶	7 BIOL 5650 Ethology	4
	BIOL 4950 Undergraduate Seminar	1
	UNIV 4AA0 University Graduation ⁷	0
	15	12

Total Hours: 122

- ¹ Students must complete a two-course sequence in either HIST or LIT (for example, World History 1 and 2 or American Lit 1 and 2). For complete HIST and LIT sequence options, see the *Bulletin*.
- ² Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.
- ³ If a LIT sequence is chosen, this course must be a CORE SOC SCI. If a HIST sequence is chosen, this course must be a CORE HUMANITIES.
- ⁴ Choose from PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090, PHIL 1100 or HONR 1007 or HONR 1017.
- ⁵ This elective in the junior year should be chosen with consideration of the electives courses to be taken in the senior year. Consult your faculty advisor.
- ⁶ A list of approved Biology electives is available from the COSAM Student Services webpage.
- ⁷ This course must be taken the semester of graduation.

Organismal Biology-Conservation and Biodiversity Option

Freshman

Fall	Hours Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
CHEM 1030 Fundamentals Chemistry I	3 CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1 CHEM 1041 Fundamental Chemistry II Laboratory	1

ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	Core History	3
		Core Social Science ²	3
	15		17

Sophomore

Fall	Hours	Spring	Hours
Core Fine Arts	3	Core Social Science or Humanities ³	3
Core Social Science ²	3	Core History or Literature ¹	3
Core Humanities (Philosophy) ⁴	3	BIOL 3060 Ecology	4
Core Literature	3	BIOL 3030 Evolution and Systematics	3
BIOL 3000 Genetics	4	CHEM 2030 Survey of Organic Chemistry	3
	16		16

Junior

Fall	Hours	Spring	Hours
BIOL 4020 Vertebrate Biodiversity	4	BIOL 5240 Animal Physiology	4
WILD 3280 Principles of Wildlife Management	3	Eco/Evo/Diversity Elective ⁵	3
BIOL 3100 Plant Biology	4	BIOL 4100 Cell Biology	3
ENTM 3040 General Entomology	4	PHYS 1000 Foundations of Physics	4
	15		14

Senior

Fall	Hours	Spring	Hours
Eco/Evo/Diversity Elective ⁵	4	BIOL 5120 Systematic Botany	4
BIOL 5090 Conservation Biology	3	Eco/Evo/Diversity Elective ⁵	7
BIOL 4010 Invertebrate Biodiversity	4	BIOL 4950 Undergraduate Seminar	1
Free Elective	3	STAT 2510 Statistics for Biological and Health Sciences	3
		UNIV 4AA0 University Graduation ⁶	0
	14		15

Total Hours: 122

¹ Students must complete a two-course sequence in either HIST or LIT (for example, World History 1 and 2 or American Lit 1 and 2). For complete HIST and LIT sequence options, see the *Bulletin*.

² Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.

³ If a LIT sequence is chosen, this course must be a CORE SOC SCI. If a HIST sequence is chosen, this course must be a CORE HUMANITIES.

⁴ Choose from PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090, PHIL 1100 or HONR 1007 or HONR 1017.

⁵ A list of approved Biology electives is available from the COSAM Student Services webpage.

⁶ This course must be taken the semester of graduation.

Chemistry & Biochemistry

These curricula, accredited by the American Chemical Society, prepare students for careers in pure and applied chemistry with a dual emphasis on classroom and laboratory experience. A flexible senior year allows student to tailor the program to individual professional goals. Graduates are prepared to enter the profession immediately or continue for advanced degree programs. The senior research program introduces students to modern advanced techniques and approaches to chemical research in an area of their interest by having them complete an individual research project in conjunction with a faculty adviser.

BA curriculum in Chemistry

The BA curriculum in Chemistry provides a strong background in chemistry while allowing students to specialize in areas of interest. It is especially well suited for students leaning towards medical sciences while allowing more flexibility than that allowed in the American Chemical Society accredited biochemistry curriculum. The program allows for great versatility in the junior and senior years, allowing the curriculum to be tailored to individual goals. The curriculum prepares students for professional careers in chemistry or biochemistry and advanced degree programs in chemistry, biochemistry and medically related fields.

Clinical Laboratory Sciences

The Division of Clinical Laboratory Sciences has two curricula leading to the degree of bachelor of science in laboratory technology or bachelor of science in medical technology. These curricula prepare students for medical laboratory careers in fields such as public health, bacteriology, environmental testing, industrial quality control, research and forensic science. Graduates may choose to qualify as certified medical technologists, which is accomplished by successfully completing a 12-month training period (rotating hospital internship) in an accredited school of medical technology and passing a national certifying examination.

Majors

- BA Chemistry (p. 376)
- BS Chemistry (p. 377)
- Biochemistry (p. 379)
- Laboratory Technology (p. 380)
- Medical Technology (p. 381)

BA Curriculum in Chemistry

This curriculum provides a strong background in chemistry while allowing students to specialize in areas of interest. It is especially well suited for students leaning towards medical sciences while allowing more flexibility than that allowed in the American Chemical Society accredited biochemistry curriculum. The program allows for great versatility in the junior and senior years, allowing the curriculum to be tailored to individual goals. The curriculum prepares students for professional careers in chemistry or biochemistry and advanced degree programs in chemistry, biochemistry and medically related fields.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
CHEM 1110 General Chemistry I ²	3	CHEM 1120 General Chemistry for Scientists and Engineers II ²	3
CHEM 1111 General Chemistry I Laboratory	1	CHEM 1121 General Chemistry II Laboratory	1
Elective	1		
	16		15

Sophomore

Fall	Hours	Spring	Hours
PHYS 1500 General Physics I		4 Core Literature I	3
CHEM 2070 Organic Chemistry I		3 PHYS 1510 General Physics II	4
CHEM 2071 Organic Chemistry I Laboratory		1 CHEM 2080 Organic Chemistry II	3
CHEM 3050 Analytical Chemistry		3 CHEM 2081 Organic Chemistry II Laboratory	1
CHEM 3051 Analytical Chemistry Laboratory		1 COMM 1000 Public Speaking	3
Elective		3	
	15		14

Junior

Fall	Hours	Spring	Hours
Core Literature II		3 Core Social Science ¹	3
Foreign Language		4 Core Fine Arts	3
BCHE 5180 Biochemistry I		3 Foreign Language	4
BCHE 5181 Biochemistry I Laboratory		1 CHEM 3000 Chemical Literature	1
CHEM 3160 Survey of Physical Chemistry		3 Elective	3
Elective		3	
	17		14

Senior

Fall	Hours	Spring	Hours
Core Social Science ¹		3 Core History II	3
Core History I		3 Core Humanities	3
CHEM Elective ³		4 CHEM Elective ³	3
Electives		6 Electives	4
		UNIV 4AA0 University Graduation ⁴	0
	16		13

Total Hours: 120

- ¹ Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.
- ² CHEM 1030/CHEM 1031 and CHEM 1040/CHEM 1041 sequence can substitute for CHEM 1110/CHEM 1111 and CHEM 1120/CHEM 1121. See advisor for details.
- ³ CHEM Electives are defined as any CHEM course 3000-level and above. A maximum of 3 hours of CHEM 4980 may be counted as a CHEM elective. Additional hours may be used as general elective.
- ⁴ This course must be taken the semester of graduation.

BS Curriculum in Chemistry**Freshman**

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
MATH 1610 Calculus I		4 MATH 1620 Calculus II	4
Core History I		3 Core History II	3

CHEM 1110 General Chemistry I ³	3 CHEM 1120 General Chemistry for Scientists and Engineers II ³	3
CHEM 1111 General Chemistry I Laboratory	1 CHEM 1121 General Chemistry II Laboratory	1
	14	14
Sophomore		
Fall	Hours Spring	Hours
PHYS 1600 Engineering Physics I	4 PHYS 1610 Engineering Physics II	4
MATH 2630 Calculus III	4 Core Literature I	3
CHEM 2070 Organic Chemistry I	3 MATH 2650 Linear Differential Equations	3
CHEM 2071 Organic Chemistry I Laboratory	1 CHEM 2080 Organic Chemistry II	3
CHEM 3050 Analytical Chemistry	3 CHEM 2081 Organic Chemistry II Laboratory	1
CHEM 3051 Analytical Chemistry Laboratory	1 Elective	1
	16	15
Junior		
Fall	Hours Spring	Hours
MATH 2660 Topics in Linear Algebra	3 Core Literature II	3
BCHE 5180 Biochemistry I	3 Core Social Science ¹	3
BCHE 5181 Biochemistry I Laboratory	1 BCHE 5190 Biochemistry II	3
CHEM 4070 Physical Chemistry I	3 BCHE 5191 Biochemistry II Laboratory	1
CHEM 4071 Physical Chemistry I Laboratory	1 CHEM 3000 Chemical Literature	1
Elective	3 CHEM 4080 Physical Chemistry II	3
	CHEM 4081 Physical Chemistry II Laboratory	1
	14	15
Senior		
Fall	Hours Spring	Hours
Core Social Science ¹	3 Core Humanities	3
Core Fine Arts	3 CHEM 4950 Undergraduate Seminar	1
CHEM 5280 Computational Chemistry	4 CHEM 4980 Undergraduate Research in Chemistry ²	3
CHEM 4100 Inorganic Chemistry	3 CHEM 4110 Inorganic Chemistry II	3
CHEM 4101 Inorganic Chemistry Laboratory	1 CHEM 4111 Inorganic Chemistry Laboratory II	1
Elective	3 CHEM 4130 Instrumental Analysis	3
	CHEM 4131 Instrumental Analysis Laboratory	1
	UNIV 4AA0 University Graduation ⁴	0
	17	15
Total Hours: 120		

¹ Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.

² May take more CHEM 4980 as additional elective hours.

³ CHEM 1030/CHEM 1031 and CHEM 1040/CHEM 1041 sequence can substitute for CHEM 1110/CHEM 1111 and CHEM 1120/CHEM 1121. See advisor for details.

⁴ This course must be taken the semester of graduation.

Curriculum in Biochemistry

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
Core History I	3	BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4
CHEM 1110 General Chemistry I ³	3	CHEM 1120 General Chemistry for Scientists and Engineers II ³	3
CHEM 1111 General Chemistry I Laboratory	1	CHEM 1121 General Chemistry II Laboratory	1
	14		15

Sophomore

Fall	Hours	Spring	Hours
PHYS 1600 Engineering Physics I	4	PHYS 1610 Engineering Physics II	4
MATH 2630 Calculus III	4	Core History II	3
CHEM 2070 Organic Chemistry I	3	MATH 2650 Linear Differential Equations	3
CHEM 2071 Organic Chemistry I Laboratory	1	CHEM 2080 Organic Chemistry II	3
CHEM 3050 Analytical Chemistry	3	CHEM 2081 Organic Chemistry II Laboratory	1
CHEM 3051 Analytical Chemistry Laboratory	1		
	16		14

Junior

Fall	Hours	Spring	Hours
BIOL 3200 General Microbiology	4	Core Literature I	3
BCHE 5180 Biochemistry I	3	BCHE 5190 Biochemistry II	3
BCHE 5181 Biochemistry I Laboratory	1	BCHE 5191 Biochemistry II Laboratory	1
CHEM 4070 Physical Chemistry I	3	BIOL 3000 Genetics	4
CHEM 4071 Physical Chemistry I Laboratory	1	CHEM 3000 Chemical Literature	1
Elective	3	CHEM 4080 Physical Chemistry II	3
		CHEM 4081 Physical Chemistry II Laboratory	1
	15		16

Senior

Fall	Hours	Spring	Hours
Core Social Science ¹	3	Core Social Science ¹	3
Core Literature II	3	Core Humanities	3
CHEM 4950 Undergraduate Seminar	1	Core Fine Arts	3
CHEM 4980 Undergraduate Research in Chemistry ²	3	CHEM 4130 Instrumental Analysis	3
CHEM 4100 Inorganic Chemistry	3	CHEM 4131 Instrumental Analysis Laboratory	1

CHEM 4101 Inorganic Chemistry Laboratory	1 Elective	3
	UNIV 4AA0 University Graduation ⁴	0
	14	16

Total Hours: 120

- ¹ Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.
- ² May take more CHEM 4980 as additional elective hours.
- ³ CHEM 1030/CHEM 1031 and CHEM 1040/CHEM 1041 sequence can substitute for CHEM 1110/CHEM 1111 and CHEM 1120/CHEM 1121. See advisor for details.
- ⁴ This course must be taken the semester of graduation.

Curriculum in Laboratory Technology

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4
HIST 1010 World History I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	HIST 1020 World History II	3
CHEM 1110 General Chemistry I	3	CHEM 1120 General Chemistry for Scientists and Engineers II	3
CHEM 1111 General Chemistry I Laboratory	1	CHEM 1121 General Chemistry II Laboratory	1
LABT 1010 Orientation	1	STAT 2510 Statistics for Biological and Health Sciences	3
	15		17

Sophomore

Fall	Hours	Spring	Hours
Core Literature I	3	Core Literature II	3
PHIL 1030 Ethics and the Health Sciences	3	BIOL 2510 Human Anatomy and Physiology II	4
BIOL 2500 Human Anatomy and Physiology I	4	BIOL 3200 General Microbiology	4
CHEM 2070 Organic Chemistry I	3	CHEM 2080 Organic Chemistry II	3
CHEM 2071 Organic Chemistry I Laboratory	1	CHEM 2081 Organic Chemistry II Laboratory	1
	14		15

Junior

Fall	Hours	Spring	Hours
BIOL 4200 Clinical Microbiology	4	Core Fine Arts	3
LABT 4010 Hematology	5	Core Social Science	3
CHEM 3050 Analytical Chemistry	3	BIOL 3000 Genetics	4
CHEM 3051 Analytical Chemistry Laboratory	1	BCHE 5180 Biochemistry I	3
Electives	3	Electives	3
	16		16

Senior

Fall	Hours Spring	Hours
Core Social Science	3 Technical Electives ²	4
Technical Electives ²	6 LABT 4250 Clinical Biochemistry/Instrumentation	4
BIOL 5500 Immunology	3 LABT 4050 Clinical Immunohematology/ Parasitology	5
BIOL 5501 Immunology Lab	2 UNIV 4AA0 University Graduation	0
	14	13

Total Hours: 120

¹ CHEM 1030/CHEM 1031 and CHEM 1040/CHEM 1041 sequence can substitute for CHEM 1110/CHEM 1111 and CHEM 1120/CHEM 1121. See advisor for details.

² See approved list of Tech Electives.

Curriculum in Medical Technology

Freshman

Fall	Hours Spring	Hours
ENGL 1100 English Composition I	3 BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4
HIST 1010 World History I	3 ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4 HIST 1020 World History II	3
CHEM 1110 General Chemistry I	3 CHEM 1120 General Chemistry for Scientists and Engineers II	3
CHEM 1111 General Chemistry I Laboratory	1 CHEM 1121 General Chemistry II Laboratory	1
LABT 1010 Orientation	1 Elective	3
	15	17

Sophomore

Fall	Hours Spring	Hours
PHIL 1030 Ethics and the Health Sciences	3 Core Literature I	3
PHYS 1500 General Physics I	4 Core Social Science	3
BIOL 2500 Human Anatomy and Physiology I	4 BIOL 2510 Human Anatomy and Physiology II	4
CHEM 2070 Organic Chemistry I	3 CHEM 2080 Organic Chemistry II	3
CHEM 2071 Organic Chemistry I Laboratory	1 CHEM 2081 Organic Chemistry II Laboratory	1
	15	14

Junior

Fall	Hours Spring	Hours
Core Fine Arts	3 Core Literature II	3
BCHE 5180 Biochemistry I	3 BCHE 5190 Biochemistry II	3
BIOL 3000 Genetics	4 STAT 2510 Statistics for Biological and Health Sciences	3
CHEM 3050 Analytical Chemistry	3 BIOL 3200 General Microbiology	4
CHEM 3051 Analytical Chemistry Laboratory	1	
	14	13

Senior

Fall	Hours	Spring	Hours
BIOL 4200 Clinical Microbiology		4 Core Social Science	3
BIOL 5500 Immunology		3 LABT 4050 Clinical Immunohematology/ Parasitology	5
BIOL 5501 Immunology Lab		2 LABT 4250 Clinical Biochemistry/Instrumentation	4
LABT 4010 Hematology		5 Elective	3
		UNIV 4AA0 University Graduation	0
	14		15

Professional Year

Fall	Hours
Degree is granted upon successful completion of a clinical internship at an approved school of medical technology affiliated with Auburn University.	
Clinical Internship	22
	22

 Total Hours: 139

- ¹ CHEM 1030/CHEM 1031 and CHEM 1040/CHEM 1041 sequence can substitute for CHEM 1110/CHEM 1111 and CHEM 1120/CHEM 1121. See advisor for details.

Geology & Geography

The curriculum in geology provides a background in the geosciences and opportunity to specialize in an area of interest (i.e., environmental geology, paleontology) through elective major or related courses. It is designed for those interested in preparation for graduate studies or employment in the field of geology.

The curriculum in geography promotes geographic literacy as an indispensable element in any educational program. It focuses on spatial relationships and the view of the Earth as the home of humankind. Geography readies students for careers in public services, consulting companies, state or federal agencies, utilities and other professions, as well as for graduate studies in geography.

Majors

- Geography (p. 382)
- Geology (p. 383)

Curriculum in Geography

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
MATH 1610 Calculus I		4 Core Social Science	3
Core History		3 Core Humanities	3
Foreign Language		4 COMM 1000 Public Speaking	3
		Foreign Language	4
	14		16

Sophomore

Fall	Hours	Spring	Hours
Core Literature		³ Core Science ³	4
Core Science ³		4 Core Social Science or Humanities ²	3
Core Fine Arts		3 Core Social Science	3
GEOG 1010 Global Geography		3 STAT 2510 Statistics for Biological and Health Sciences or 2010 Statistics for Social and Behavior Sciences	3
GEOG 2010 Cultural Geography		3 GEOG 2020 Physical Geography	3
	16		16

Junior

Fall	Hours	Spring	Hours
GEOG 3810 Cartography and Graphics		4 GEOG 5830 Geographic Information Systems	4
GEOG Elective		3 GEOG Electives	3
Core History or Literature ¹		3 COMP 1000 Personal Computer Applications ⁴	2
Electives		5 Electives	6
	15		15

Senior

Fall	Hours	Spring	Hours
GEOG 5820 Aerial Photography and Remote Sensing		4 GEOG Elective	6
GEOG Electives		6 Electives	8
Electives		4 UNIV 4AA0 University Graduation ⁵	0
	14		14

Total Hours: 120

¹ Students must complete a two-course sequence in either HIST or LIT (for example, World History 1 and 2 or American Lit 1 and 2). For complete HIST and LIT sequence options, see the *Bulletin*.

² If a LIT sequence is chosen, this course must be a CORE SOC SCI. If a HIST sequence is chosen, this course must be a CORE HUMANITIES.

³ CORE Science Sequences: BIOL 1020 – BIOL 1030, CHEM 1030/CHEM 1031 – CHEM 1040/CHEM 1041, CHEM 1110/CHEM 1111 – CHEM 1120/CHEM 1121, GEOL 1100 – GEOL 1110, PHYS 1500 – PHYS 1510, PHYS 1600 – PHYS 1610.

⁴ Elective hours may be substituted upon passing the COMP 1AA0 placement test. See the Computer Science and Engineering Dept. for details.

⁵ This course must be taken the semester of graduation.

Curriculum in Geology**Freshman**

Fall	Hours	Spring	Hours
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
Core History I	3	Core History II	3

ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
GEOL 1100 Physical Geology	4	GEOL 1110 Historical Geology	4
	14		14

Sophomore

Fall	Hours	Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
World Literature I	3	GEOL 2050 Igneous and Metamorphic Petrology	4
GEOL 2010 Mineralogy and Optical Crystallography	5	Elective	4
	16		16

Junior

Fall	Hours	Spring	Hours	Summer	Hours
PHYS 1500 General Physics I	4	PHYS 1510 General Physics II	4	GEOL 3650 Field Camp	6
Core Fine Arts	3	Core Social Science	3		
Technical Elective ¹	3	GEOL 3400 Structural Geology	4		
GEOL 3200 Principles of Paleontology	3	GEOL Elective ¹	4		
GEOL Elective ¹	3				
	16		15		6

Senior

Fall	Hours	Spring	Hours
Technical Elective ¹	4	ECON 2020 Principles of Microeconomics	3
GEOL 4010 Sedimentary Petrology	3	GEOL 4110 Stratigraphy	3
GEOL Elective ¹	4	GEOL 4740 Geology Senior Seminar	1
Core Humanities	3	GEOL Elective ¹	4
		Core Literature	3
		UNIV 4AA0 University Graduation ²	0
	14		14

Total Hours: 125

¹ See list of approved Technical and Geology electives at <http://www.auburn.edu/academic/cosam/departments/student-services/registration-and-planning/documents/12%20GEOL.pdf>

² This course must be taken the semester of graduation.

Mathematics & Statistics

The Department of Mathematics and Statistics offers degree curricula in mathematics and in applied mathematics (with its various options), as well as minors and a minor in statistics. Majors acquire a firm foundation in mathematics preparing them for further study,

or for careers in mathematics or statistics, and related fields. For a minor in MATH or STAT see the “Minors” heading earlier in this section.

This curriculum of Mathematics provides students with a general background in Mathematics preparing them for graduate studies in Mathematics, or careers that require mathematical knowledge and problem solving skills, and is well suited for students who wish to pursue career in teaching Mathematics in a university/college, or who desire more flexibility or emphasis in liberal arts.

The Department of Mathematics and Statistics offers three options in the field of Applied Mathematics. The option in Applied Mathematics is suitable for students who are preparing for graduate work in mathematics, or applied mathematics, as well as for those anticipating careers which are supported by significant applied mathematics such as engineering, physical sciences, or computer science, and the more recently mathematicized fields of biological, behavioral, or managerial sciences.

The option in Discrete Mathematics prepares students for graduate work in mathematics or theoretical computer science, and for careers in industry supported by discrete mathematics dealing with problems in graph theory, operations research, discrete optimization, computer science, communications and information sciences.

The option in Actuarial Science prepares students for a career in the insurance industry and in other businesses relying on the expertise of actuaries, but is at the same time flexible enough to allow its graduates to enter graduate programs in mathematics and related areas.

Students should consult the departmental advisor to determine appropriate technical electives for the emphasis of their choice.

Majors

- Actuarial Science (p. 386)
- Applied Discrete Mathematics (p. 388)
- Applied Mathematics (p. 389)
- Mathematics (p. 385)

Minors

- Mathematics (p. 386)
- Statistics (p. 390)

Curriculum in Mathematics

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core Science ⁵	4	Core Science ⁵	4
Core Humanities	3	Core History or Literature ¹	3
Core History	3	MATH 1620 Calculus II	4
MATH 1610 Calculus I	4	COMP 1200 Introduction to Computing for Engineers and Scientists	2
	17		16

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Core Social Science or Humanities ³	3
Core Social Science ²	3	MATH 2650 Linear Differential Equations	3

MATH 2630 Calculus III	4	MATH 3100 Introduction to Advanced Mathematics	3
MATH 2660 Topics in Linear Algebra	3	STAT 3600 Probability and Statistics I	3
Elective	3	Elective	3
	16		15
Junior			
Fall	Hours	Spring	Hours
Core Social Science ²	3	Core Fine Arts	3
Foreign Language ⁵	4	Foreign Language ⁵	4
MATH 5200 Analysis I	3	MATH 5210 Analysis II	3
MATH 5310 Introduction to Abstract Algebra I	3	MATH 5320 Introduction to Abstract Algebra II	3
Elective	3	Elective	3
	16		16
Senior			
Fall	Hours	Spring	Hours
Applied Math Elective ⁷	3	Math Elective ⁶	9
MATH 5500 Introduction to Topology	3	Elective	3
Math Elective ⁶	3	UNIV 4AA0 University Graduation	0
Elective	3		
	12		12

Total Hours: 120

- ¹ Students must complete a two-course sequence in either HIST or LIT (for example, World History 1 and 2 or American Lit 1 and 2). For complete HIST and LIT sequence options, see the *Bulletin*.
- ² Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.
- ³ If a LIT sequence is chosen, this course must be a CORE SOC SCI. If a HIST sequence is chosen, this course must be a CORE HUMANITIES.
- ⁴ FOREIGN LANGUAGE: 1010-1020 series in French, Greek, German, Italian, Latin, Japanese, Russian, or Spanish.
- ⁵ CORE SCIENCE: PHYS 1600- PHYS 1610, BIOL 1020- BIOL 1030, CHEM 1030- CHEM 1040 with labs, or GEOL 1100- GEOL 1110.
- ⁶ Math Requisite: Courses designated MATH or STAT at the level of 3000 or higher, no more than one 3000-level course. Subject to advisor's approval.
- ⁷ Applied Math Requisite: MATH 5630, MATH 5640, MATH 5670, or MATH 5000.

Mathematics Minor

Fifteen semester hours of courses labeled MATH or STAT at the level of 3000 or higher; at least three courses must be designated MATH. A minimum grade of C in each of these courses is required.

Option in Actuarial Science

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3

Core Science ⁴	4 Core Science ⁴	4
Core History	3 Core History or Literature ¹	3
Core Humanities	3 COMP 1200 Introduction to Computing for Engineers and Scientists	2
MATH 1610 Calculus I	4 MATH 1620 Calculus II	4
	17	16

Sophomore

Fall	Hours Spring	Hours
Core Literature	3 Core Social Science or Humanities ³	3
ECON 2020 Principles of Microeconomics	3 ECON 2030 Principles of Macroeconomics	3
ACCT 2810 Fundamentals Of Accounting	3 MATH 2790 Mathematics of Interest Theory	3
MATH 2630 Calculus III	4 MATH 2650 Linear Differential Equations	3
MATH 2660 Topics in Linear Algebra	3 MATH 3100 Introduction to Advanced Mathematics	3
	16	15

Junior

Fall	Hours Spring	Hours
Core Social Science ²	3 FINC 3610 Principles of Business Finance	3
Core Fine Arts	3 Statistics Requisite ⁶	3
STAT 3600 Probability and Statistics I	3 MATH 4820 Actuarial Seminar in Probability	3
MATH 4790 Actuarial Seminar in the Mathematics of Finance	3 Math Electives ⁵	3
Electives	4 Electives	4
	16	16

Senior

Fall	Hours Spring	Hours
FINC 3630 Advanced Business Finance	3 MATH 5810 Actuarial Mathematics II	3
MATH 5000 Math Modeling Continuous	3 Math Electives ⁵	6
MATH 5800 Actuarial Mathematics I	3 Electives	3
Electives	3 UNIV 4AA0 University Graduation	0
	12	12

Total Hours: 120

¹ Students must complete a two-course sequence in either HIST or LIT (for example, World History 1 and 2 or American Lit 1 and 2). For complete HIST and LIT sequence options, see the *Bulletin*.

² Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.

³ If a LIT sequence is chosen, this course must be a CORE SOC SCI. If a HIST sequence is chosen, this course must be a CORE HUMANITIES.

⁴ Core Science: One of the sequences PHYS 1600/PHYS 1610, BIOL 1020/BIOL 1030, CHEM 1030/CHEM 1040 with labs, or GEOL 1100/GEOL 1110.

⁵ MATH or STAT courses at the 3000 level or higher; no more than one 3000-level course. Subject to advisor's approval.

⁶ Any course that will serve as the statistics prerequisite for FINC 3630. See advisor for approved courses, currently STAT 2610 or STAT 3610.

Option in Applied Discrete Mathematics

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core Science ⁴	4	Core Science ⁴	4
Core History	3	Core History or Literature ¹	3
Core Humanities	3	COMP 1200 Introduction to Computing for Engineers and Scientists	2
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
	17		16

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Core Social Science or Humanities ³	3
Core Social Science ²	3	COMP 3000 Object-Oriented Programming for Engineers and Scientists	3
COMP 2000 Network Programming with HTML and Java	3	MATH 3710 Discrete Mathematics	3
MATH 2660 Topics in Linear Algebra	3	MATH 2650 Linear Differential Equations	3
MATH 2630 Calculus III	4	STAT 3600 Probability and Statistics I	3
	16		15

Junior

Fall	Hours	Spring	Hours
Core Social Science ²	3	Core Fine Arts	3
MATH 5750 Graph Theory	3	MATH 5330 Computational Algebra	3
MATH 5310 Introduction to Abstract Algebra I	3	Analysis Elective ⁵	3
Elective	4	Elective	4
Interdisciplinary Elective ⁵	3	Interdisciplinary Elective ⁵	3
	16		16

Senior

Fall	Hours	Spring	Hours
Algebra/Linear Algebra Elective ⁵	3	Discrete Math Elective ⁵	3
Discrete Math Electives ⁵	6	Math Elective ⁵	6
Interdisciplinary Elective ⁵	3	Elective	3
		UNIV 4AA0 University Graduation ⁶	0
	12		12

Total Hours: 120

- ¹ Students must complete a two-course sequence in either HIST or LIT (for example, World History 1 and 2 or American Lit 1 and 2). For complete HIST and LIT sequence options, see the *Bulletin*.
- ² Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.
- ³ If a LIT sequence is chosen, this course must be a CORE SOC SCI. If a HIST sequence is chosen, this course must be a CORE HUMANITIES.
- ⁴ Core Science: One of the sequences PHYS 1600/PHYS 1610, BIOL 1020/BIOL 1030, CHEM 1030/CHEM 1040 with labs, or GEOL 1100/GEOL 1110.
- ⁵ Guidelines for Discrete Math electives, Math Electives, Applied Analysis Elective, Algebra/Linear Algebra Elective and Interdisciplinary Electives can be found online at <http://www.auburn.edu/academic/cosam/departments/student-services/registration-and-planning/documents/12%20AMTH%20DISC.pdf>
- ⁶ This course must be taken the semester of graduation.

Option in Applied Mathematics

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
Core Humanities	3	Core Science ⁴	4
Core Science ⁴	4	Core History or Literature ¹	3
Core History	3	MATH 1620 Calculus II	4
MATH 1610 Calculus I	4	COMP 1200 Introduction to Computing for Engineers and Scientists	2
	17		16

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Core Social Science or Humanities ³	3
Core Social Science ²	3	MATH 2650 Linear Differential Equations	3
MATH 2630 Calculus III	4	MATH 3100 Introduction to Advanced Mathematics	3
MATH 2660 Topics in Linear Algebra	3	STAT 3600 Probability and Statistics I	3
Interdisciplinary Electives ⁵	3	Interdisciplinary Elective ⁵	3
	16		15

Junior

Fall	Hours	Spring	Hours
Core Social Science ²	3	Core Fine Arts	3
MATH 5200 Analysis I	3	MATH 5210 Analysis II	3
MATH 5630 Introduction to Numerical Analysis I	3	MATH 5640 Introduction to Numerical Analysis II	3
Interdisciplinary Elective ⁵	3	Interdisciplinary Elective ⁵	3
Electives	4	Elective	4
	16		16

Senior

Fall	Hours	Spring	Hours
MATH 5000 Math Modeling Continuous	3	Math Elective ⁵	9

MATH 5670 Probability and Stochastic Processes I	3 Elective	3
Math Elective ⁵	3 UNIV 4AA0 University Graduation ⁶	0
Interdisciplinary Elective ⁵	3	
	12	12

Total Hours: 120

- 1

Students must complete a two-course sequence in either HIST or LIT (for example, World History 1 and 2 or American Lit 1 and 2). For complete HIST and LIT sequence options, see the *Bulletin*.
- 2

Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.
- 3

If a LIT sequence is chosen, this course must be a CORE SOC SCI. If a HIST sequence is chosen, this course must be a CORE HUMANITIES.
- 4

Core Science: One of the sequences PHYS 1600/PHYS 1610, BIOL 1020/BIOL 1030, CHEM 1030/CHEM 1040 with labs, or GEOL 1100/GEOL 1110.
- 5

Guidelines for Math Elective and Interdisciplinary Elective are online at <http://www.auburn.edu/academic/cosam/departments/student-services/registration-and-planning/documents/12%20AMTH.pdf>.
- 6

This course must be taken the semester of graduation.

Statistics Minor

Fifteen hours of courses from the following list.

Select one of the following Series:	6
Series A (each course is 3 hours)	
STAT 3600 Probability and Statistics I	
STAT 3610 Probability and Statistics II	
Series B (each course is 3 hours)	
STAT 3010 Statistics for Engineers and Scientists	
STAT 4020 Intermediate Statistical Method	
Electives	
Select three of the following:	9
STAT 4610 Applied Regression Analysis	
STAT 4620 Applied Nonparametric Statistics	
STAT 4630 Applied Time-Series Analysis	
STAT 5110 SAS Programming and Applications	
STAT 5630 Sample Survey, Design and Analysis	
Total Hours	15

A minimum grade of C in each of these courses is required.

Physics

Physics majors acquire a firm foundation for careers in physics and related fields and excellent preparation for further study. Through the judicious use of electives, this curriculum provides not only a thorough understanding of physics, but also the ability to solve problems in other fields of interest to the student.

Major

- Physics (p. 391)

Minor

- Physics (p. 392)

Physics

Curriculum in Physics (PHYS)

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I or 1710 Calculus for Engineering and Science I	4	MATH 1620 Calculus II or 1720 Calculus for Engineering and Science II	4
PHYS 1607 Honors Physics I or 1600 Engineering Physics I	4	PHYS 1617 Honors Physics II or 1610 Engineering Physics II	4
Core Fine Arts	3	Core Humanities	3
	14		14

Sophomore

Fall	Hours	Spring	Hours
Core Literature	3	Core Literature	3
COMM 1000 Public Speaking	3	Core History II	3
Core History I	3	MATH 2650 Linear Differential Equations	3
MATH 2630/2730 Calculus III	4	PHYS 2300 Physics Laboratory Skills	2
PHYS 2200 Introductory Quantum Physics and Relativity	3	PHYS 2100 Intermediate Mechanics	3
	16		14

Junior

Fall	Hours	Spring	Hours
Core Social Science ¹	3	Core Social Science ¹	3
PHYS 3100 Intermediate Electricity and Magnetism	3	Professional Elective ³	3
PHYS 4100 Fundamentals of Quantum Mechanics	3	PHYS 3200 Statistical Thermodynamics	3
Science Electives ²	4	Science Elective ²	4
Electives	3	Electives	3
	16		16

Senior

Fall	Hours	Spring	Hours
PHYS 4200 Fundamental Experiments in Physics	2	Professional Elective ³	7
Professional Elective ³	3	Physics Elective ³	3
Electives	9	Electives	6

	UNIV 4AA0 University Graduation ⁴	0
	14	16

Total Hours: 120

- 1
- Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.
- 2
- Science Electives consist of a sequence of GEOL 1100- GEOL 1110 or CHEM 1030/CHEM 1031 – CHEM 1040/CHEM 1041 or BIOL 1020- BIOL 1030.
- 3
- PHYS and Professional Electives must be at the 3000 level or higher. A Plan of Study indicating choices and physics advisor approval for Physics and Professional electives must be on file in the Dean's Office before scheduling those courses.
- 4
- This course must be taken the semester of graduation.

Physics Minor

PHYS 2200	Introductory Quantum Physics and Relativity	3
PHYS 2100	Intermediate Mechanics	3
PHYS 3100	Intermediate Electricity and Magnetism	3
PHYS 3200	Statistical Thermodynamics	3
PHYS 4100	Fundamentals of Quantum Mechanics	3
Total Hours		15

Pre-Health Professional Curricula

Pre-health professional curricula are offered in pre-dentistry, pre-medicine, pre-optometry, pre-physical therapy, pre-physician assistant, pre-pharmacy and pre-veterinary medicine. Advisors are available to guide the students concerning admissions requirements to the professional schools. The department in which students major will advise them where applicable. Completion of these curricula does not assure admission to a professional school. Competition for admission to professional schools is keen; the number of qualified applicants exceeds the number of places available.

Pre-Dentistry and Pre-Medicine

These programs are designed to prepare students for dental and medical schools and lead to a bachelor of science in one of several majors offered through the college. The requirements are very exacting and demand high scholastic competence and performance.

Most American dental and medical schools recommend that applicants have at least two semesters of freshman biology, general chemistry, organic chemistry, and physics with labs; (2) breadth in the educational experience; and (3) in-depth experience in a single discipline. Auburn University students complete these recommendations by enrolling in a core of courses shown in the curriculum model below. Each student also declares a major. Students should confer with the COSAM pre-health advisors for specific course requirements since these can vary from school to school. Students may choose to major in a curriculum in another college or school, but they should meet with the COSAM Director of Pre-Health Programs as freshmen for assistance in becoming competitive applicants.

In the junior year, students should attend the mandatory meetings concerning the application process that are conducted by the COSAM Chairman of the Pre-Health Professions Advisory Committee (PPAC) in January. Also, students in pre-dentistry or pre-medicine should take the Dental Admission Test or the Medical College Admission Test at least a year before the date of entry to professional school and submit applications to the professional schools of their choice at that time.

Pre-Optometry

This program leads to a bachelor of science and prepares students for the rigorous demands of American optometry schools.

Students must select a major and should confer with the COSAM pre-health advisors for specific course requirements since these can vary from school to school. Students may also choose to major in a curriculum in another college or school, but they should work with the COSAM Director of Pre-Health Programs as freshmen for assistance in becoming competitive applicants.

Pre-optometry students should review the websites of the optometry schools of their choice during the freshman year to determine any special admission requirements of those schools. The prerequisite courses for most U.S. optometry schools are listed in the curriculum model below, either as required courses or as electives. In the junior year, students should attend the mandatory meetings concerning the application process that are conducted by the COSAM Chairman of the Pre-Health Professions Advisory Committee (PPAC) in January. Students should take the Optometry Admission Test and complete an official application for admission to the schools of their choice about a year in advance of the expected date of enrollment.

Pre-Physical Therapy

This program prepares students applying to schools of physical therapy and leads to a bachelor's degree in one of the majors offered in the College of Sciences and Mathematics. Students should confer with their academic advisors for specific course requirements since these can vary from school to school. Students may also choose to major in a curriculum in another college or school, but they should meet with the COSAM Director of Pre-Health Programs as freshmen for information about becoming competitive applicants. Students should review the websites of the schools of their choice during the freshman year to determine any special admission requirements of those schools. Students should take the Graduate Record Examination and complete an official application for admission to the schools of their choice about a year in advance of the expected date of enrollment.

Pre-Pharmacy

This program meets the requirements for admission to the Auburn University Harrison School of Pharmacy, which is fully accredited by the American Council on Pharmaceutical Education. Complete information about the professional curriculum in pharmacy may be found in the Harrison School of Pharmacy section of this *Bulletin*.

To be considered for admission, the applicant must complete the course requirements listed in the curriculum model below and meet other admissions criteria set by the Harrison School of Pharmacy.

Although not required, students may want to complete an undergraduate degree before entering pharmacy school since the majority of students admitted have a degree. Any major may be acceptable as long as the pre-pharmacy requirements are completed. The College of Sciences and Mathematics offers a major in biomedical sciences that is an excellent choice for students interested in this option. Students should confer with the COSAM pre-health advisors for specific course requirements.

Pre-Physician Assistant

This program is designed to prepare students for enrollment in physician assistant programs and leads to a bachelor of science in one of several majors offered through the college. The academic requirements are very demanding and high scholastic competence and performance are expected. Auburn University students complete these recommendations by enrolling in a core of courses shown in the curriculum model below. Each student also declares a major. Students should confer with the COSAM pre-health advisors for specific course requirements since these can vary from school to school. Students may choose to major in a curriculum in another college or school, but they should meet with the COSAM Director of Pre-Health Programs as freshmen for assistance in becoming competitive applicants and applying.

Students in the pre-physician assistant program should take the Graduate Record Examination at least a year before the date of entry to professional school and submit an application to the schools of their choice at that time.

Pre-Veterinary Medicine

Students in the Pre-Veterinary Medicine (PVET) curriculum must select a major by the end of their sophomore year. Students in Sciences and Mathematics typically select microbiology (MCMB, PVET) or organismal biology (IBIO, PVET) as majors. Pre-Veterinary options in the College of Agriculture include animal sciences (ANDS, PVET) and poultry science (POUL, PVET). A pre-vet option in wildlife (WILD, PVET) sciences also exists in the School of Forestry and Wildlife Sciences. The minimum requirements for admission to the College of Veterinary Medicine at Auburn University are incorporated into the curriculum models for all of these majors.

It is possible to gain admission to the College of Veterinary Medicine by completing only the minimum requirements listed. However, it is preferable to select a major and earn a baccalaureate degree. If a student is admitted to the College of Veterinary Medicine prior to completion of the full four years, he or she may obtain a BS degree by successfully completing the first three years of some of the Pre-Veterinary curricula and the first year of veterinary school. Students should consult their advisors regarding which curricula offer this option. Application for admission to the College of Veterinary Medicine must be submitted to the dean of that college. A minimum grade-point average of 2.5 is required for application; D grades in required courses are unacceptable. All minimum requirements, including courses repeated due to time limitations, must be completed by the end of the spring term preceding the date of admission, and all advanced required courses in physical and biological sciences (organic chemistry and physics) must have been completed within six calendar years prior to the anticipated entrance date. Competition for admission to the professional schools is keen with the number of

qualified applicants exceeding the number of places available. For additional information, see College of Veterinary Medicine section and the Pre-Veterinary Medicine curricula in the College of Agriculture.

Programs

- Biomedical Sciences (p. 394)
- Microbiology/Pre-Veterinary Medicine Option (p. 395)
- Organismal Biology/Pre-Veterinary Medicine Option (p. 398)
- Pre-Dentistry and Pre-Medicine (p. 396)
- Pre-Optometry (p. 399)
- Pre-Pharmacy (p. 400)
- Pre-Physical Therapy
- Pre-Physician Assistant
- Pre-Veterinary Medicine (p. 397)

Curriculum in Biomedical Sciences

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	Core History I	3
CHEM 1030 Fundamentals Chemistry I ¹	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
SCMH 1890 Pre-Health Professions Orientation	1		
	16		14

Sophomore

Fall	Hours	Spring	Hours
PHYS 1500 General Physics I	4	PHYS 1510 General Physics II	4
CHEM 2070 Organic Chemistry I	3	CHEM 2080 Organic Chemistry II	3
CHEM 2071 Organic Chemistry I Laboratory	1	CHEM 2081 Organic Chemistry II Laboratory	1
Core Literature	3	BIOL 3000 Genetics	4
Core History II	3	COMM 1000 Public Speaking	3
	14		15

Junior

Fall	Hours	Spring	Hours
PSYC 2010 Introduction to Psychology	3	Core Social Science	3
STAT 2510 Statistics for Biological and Health Sciences	3	Professional Elective ²	4
BIOL 3200 General Microbiology	4	BIOL 4100 Cell Biology	3
BCHE 5180 Biochemistry I	3	BIOL 4101 Cell Biology Laboratory	2
		BCHE 5190 Biochemistry II	3
	13		15

Senior

Fall	Hours Spring	Hours
BIOL 4410 Vertebrate Development	5 UNIV 4AA0 University Graduation ³	0
BIOL 5500 Immunology	3 BIOL 3010 Comparative Anatomy <i>or</i> 4000 Histology	4
BIOL 4980 Undergraduate Research	2 BIOL 5600 Mammalian Physiology (Biomedical Physiology)	6
PHIL 1030 Ethics and the Health Sciences	3 Core Fine Arts	3
Electives	4 Electives	3
	17	16

Total Hours: 120

Options for courses labeled CORE are in the Auburn University *Bulletin*, under Core Curriculum.

- ¹ The General Chemistry CHEM 1110/CHEM 1111- CHEM 1120/CHEM 1121 sequence or the General Chemistry Honors Sequence can substitute for CHEM 1030/CHEM 1031- CHEM 1040/CHEM 1041. See advisor.
- ² A Professional Elective is any foreign language course or a 3000-level or higher BIOL, CHEM, or PHYS course.
- ³ Students may only register for UNIV 4AA0 during the semester they plan to graduate.

Curriculum in Microbiology/Pre-Veterinary Medicine Option (MCMB, PVET)

Freshman

Fall	Hours Spring	Hours
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
ENGL 1100 English Composition I	3 ENGL 1120 English Composition II	3
CHEM 1030 Fundamentals Chemistry I	3 CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1 CHEM 1041 Fundamental Chemistry II Laboratory	1
MATH 1610 Calculus I	4 Core History	3
	15	14

Sophomore

Fall	Hours Spring	Hours
Core Literature	3 PHYS 1510 General Physics II	4
PHYS 1500 General Physics I	4 CHEM 2080 Organic Chemistry II	3
CHEM 2070 Organic Chemistry I	3 CHEM 2081 Organic Chemistry II Laboratory	1
CHEM 2071 Organic Chemistry I Laboratory	1 Core History or Literature ¹	3
BIOL 3000 Genetics	4 BIOL 3200 General Microbiology	4
	15	15

Junior

Fall	Hours Spring	Hours
Core Social Science ²	3 Core Humanities (Philosophy) ⁴	3
Core Social Science or Humanities ³	3 Core Fine Arts	3
BIOL 4100 Cell Biology	3 Core Social Science ²	3

BCHE 3200 Principles of Biochemistry ⁶	3 BIOL 5220 Introductory Molecular Genetics	3
BIOL 4200 Clinical Microbiology	4 BIOL 5210 Microbial Physiology	3
	BIOL 4950 Undergraduate Seminar	1

Students who complete the above 6 semesters and successfully complete the first year of veterinary school may be awarded a BS in microbiology. In the event the first year veterinary college alternative is not followed, the indicated senior year courses must be successfully completed to receive the BS in microbiology.

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Senior

Fall	Hours	Spring	Hours
BCHE 5180 Biochemistry I	3	BCHE 5190 Biochemistry II	3
BCHE 5181 Biochemistry I Laboratory	1	BIOL 5230 Virology	3
BIOL 5500 Immunology	3	Biology Elective ⁵	3
BIOL 5501 Immunology Lab	2	ROTC/Free Elective	4
Biology Elective ⁵	3	UNIV 4AA0 University Graduation	0
ROTC/Free Elective	4		
	16		13

Total Hours: 120

ANSC 3400 Animal Nutrition is now required to enter vet school at Auburn. See advisor for details.

- ¹ Students must complete a two-course sequence in either HIST or LIT (for example, World History 1 and 2 or American Lit 1 and 2). For complete HIST and LIT sequence options, see the *Bulletin*.
- ² Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.
- ³ If a LIT sequence is chosen, this course must be a CORE SOC SCI. If a HIST sequence is chosen, this course must be a CORE HUMANITIES.
- ⁴ Choose from PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090, PHIL 1100 or HONR 1007 or HONR 1017.
- ⁵ See approved list of Biology electives.
- ⁶ Students should consult an advisor before scheduling.

Curriculum in Pre-Dentistry and Pre-Medicine

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	HIST 1010 World History I	3
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4

SCMH 1890 Pre-Health Professions Orientation	1	
	16	14

Sophomore

Fall	Hours	Spring	Hours
PHYS 1500 General Physics I	4	PHYS 1510 General Physics II	4
CHEM 2070 Organic Chemistry I	3	CHEM 2080 Organic Chemistry II	3
CHEM 2071 Organic Chemistry I Laboratory	1	CHEM 2081 Organic Chemistry II Laboratory	1
Core History II	3	COMM 1000 Public Speaking	3
Core Literature	3	BIOL 3000 Genetics	4
	14		15

Junior

Fall	Hours	Spring	Hours
PSYC 2010 Introduction to Psychology	3	Core Social Science	3
STAT 2510 Statistics for Biological and Health Sciences	3	Core Fine Arts	3
BIOL 3200 General Microbiology	4	PHIL 1030 Ethics and the Health Sciences	3
BIOL 4410 Vertebrate Development	5	BIOL 4100 Cell Biology	3
		BIOL 4101 Cell Biology Laboratory	2
	15		14

Total Hours: 88

The student should declare a major when they have completed 60 hours.

¹ The Chemistry CHEM 1110/CHEM 1111- CHEM 1120/CHEM 1121 sequence can substitute for CHEM 1030/CHEM 1031- CHEM 1040/CHEM 1041. See advisor for details.

² Students who complete a HIST sequence other than HIST 1010 and HIST 1020 should see an advisor for CORE SOC SCI choices.

Curriculum in Pre-Veterinary Medicine (PVET)

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
MATH 1150 Pre-Calculus Algebra and Trigonometry ¹	4	Core History I	3
	15		14

Sophomore

Fall	Hours	Spring	Hours
CHEM 2070 Organic Chemistry I	3	CHEM 2080 Organic Chemistry II	3
CHEM 2071 Organic Chemistry I Laboratory	1	CHEM 2081 Organic Chemistry II Laboratory	1

CORE Social Science	3 Core Philosophy	3
Core Literature	3 Core Social Science or Hum ²	3
Core History or Literature	3 BIOL 3000 Genetics	4
	13	14

Junior

Fall	Hours Spring	Hours
PHYS 1500 General Physics I	4 PHYS 1510 General Physics II	4
BCHE 3200 Principles of Biochemistry	3 Core Social Science	3
Core Fine Arts	3 BIOL 3200 General Microbiology	4
Elective	3 ANSC 3400 Animal Nutrition	4
	13	15

Total Hours: 84

¹ Students must also take MATH 1610 Calculus I to receive a degree from the College of Sciences and Mathematics.

² If a LIT sequence is chosen, this course must be a CORE SOC SCI. If a HIST sequence is chosen, this course must be a CORE Humanities.

Organismal Biology-Pre-Veterinary Medicine Option

Freshman

Fall	Hours Spring	Hours
MATH 1610 Calculus I	4 ENGL 1120 English Composition II	3
ENGL 1100 English Composition I	3 CHEM 1040 Fundamental Chemistry II	3
CHEM 1030 Fundamentals Chemistry I	3 CHEM 1041 Fundamental Chemistry II Laboratory	1
CHEM 1031 Fundamental Chemistry I Laboratory	1 Core History	3
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4 BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4
	15	14

Sophomore

Fall	Hours Spring	Hours
Core Literature	3 Core Fine Arts	3
Core Social Science ²	3 Core History or Literature ¹	3
PHYS 1500 General Physics I	4 PHYS 1510 General Physics II	4
CHEM 2070 Organic Chemistry I	3 CHEM 2080 Organic Chemistry II	3
CHEM 2071 Organic Chemistry I Laboratory	1 CHEM 2081 Organic Chemistry II Laboratory	1
Elective	3	
	17	14

Junior

Fall	Hours Spring	Hours
Core Social Science or Humanities ³	3 Core Humanities (Philosophy) ⁴	3
BCHE 3200 Principles of Biochemistry	3 Core Social Science ²	3
BIOL 3000 Genetics	4 BIOL 3030 Evolution and Systematics	3

Select one of the following:	4 BIOL 3060 Ecology	4
BIOL 4010 Invertebrate Biodiversity	Free Elective (ANSC 3400) ⁶	4
BIOL 4020 Vertebrate Biodiversity		
BIOL 4950 Undergraduate Seminar	1	

Students who complete the above 6 semesters and successfully complete the first year of veterinary school may be awarded a BS in zoology. In the event the first year Veterinary College alternative is not followed, the indicated senior year courses must be successfully completed to receive the BS in zoology.

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Senior

Fall	Hours	Spring	Hours
STAT 3010 Statistics for Engineers and Scientists	3	BIOL 5240 Animal Physiology	4
BIOL 3200 General Microbiology	4	Biology Elective ⁵	9
BIOL 4100 Cell Biology	3	Elective	3
Biology Elective ⁵	5	UNIV 4AA0 University Graduation ⁷	0
	15		16

Total Hours: 123

- ¹ Students must complete a two-course sequence in either HIST or LIT (for example, World History 1 and 2 or American Lit 1 and 2). For complete HIST and LIT sequence options, see the *Bulletin*.
- ² Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.
- ³ If a LIT sequence is chosen, this course must be a CORE SOC SCI. If a HIST sequence is chosen, this course must be a CORE HUMANITIES.
- ⁴ Choose from PHIL 1010, PHIL 1020, PHIL 1030, PHIL 1040, PHIL 1050, PHIL 1060, PHIL 1070, PHIL 1080, PHIL 1090, PHIL 1100 or HONR 1007 or HONR 1017.
- ⁵ See list of approved Biology electives.
- ⁶ ANSC 3400 is a requirement for Auburn's vet school.
- ⁷ This course must be taken the semester of graduation.

Pre-Optometry

Curriculum in Pre-Optometry (POPT)

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	Core History I	3
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4	BIOL 1030 Organismal Biology & BIOL 1031 Organismal Biology Laboratory	4

SCMH 1890 Pre-Health Professions Orientation	1	
	16	14

Sophomore

Fall	Hours	Spring	Hours
PHYS 1500 General Physics I	4	PHYS 1510 General Physics II	4
CHEM 2070 Organic Chemistry I	3	CHEM 2080 Organic Chemistry II	3
CHEM 2071 Organic Chemistry I Laboratory	1	CHEM 2081 Organic Chemistry II Laboratory	1
Core History II	3	COMM 1000 Public Speaking	3
Core Literature	3	BIOL 3000 Genetics	4
	14		15

Junior

Fall	Hours	Spring	Hours
PSYC 2010 Introduction to Psychology	3	Core Social Science	3
STAT 2510 Statistics for Biological and Health Sciences	3	PHIL 1030 Ethics and the Health Sciences	3
BIOL 3200 General Microbiology	4	Core Fine Arts	3
BIOL 4410 Vertebrate Development	5	BIOL 4101 Cell Biology Laboratory	2
		BIOL 4100 Cell Biology	3
	15		14

Total Hours: 88

The student should declare a major when they have completed 60 hours.

¹ The Chemistry CHEM 1110/CHEM 1111- CHEM 1120/CHEM 1121 sequence can substitute for CHEM 1030/CHEM 1031- CHEM 1040/CHEM 1041. See advisor for details.

² Students who complete a HIST sequence other than HIST 1010 and HIST 1020 should see an advisor for CORE SOC SCI choices.

Pre-Pharmacy

Curriculum in Pre-Pharmacy (PPHR)

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	CHEM 1040 Fundamental Chemistry II	3
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1041 Fundamental Chemistry II Laboratory	1
CHEM 1031 Fundamental Chemistry I Laboratory	1	Core Fine Arts	3
Core History I ²	3	BIOL 1020 Principles of Biology & BIOL 1021 Principles of Biology Laboratory	4
SCMH 1890 Pre-Health Professions Orientation	1		
	15		14

Sophomore

Fall	Hours	Spring	Hours	Summer	Hours
CHEM 2070 Organic Chemistry I	3	CHEM 2080 Organic Chemistry II	3	BIOL 3200 General Microbiology	4
CHEM 2071 Organic Chemistry I Laboratory	1	CHEM 2081 Organic Chemistry II Laboratory	1	BCHE 3200 Principles of Biochemistry	3
BIOL 2500 Human Anatomy and Physiology I	4	BIOL 2510 Human Anatomy and Physiology II	4		
Core Literature	3	Core Soc Sci	3		
Core History II ²	3	Core Humanities ¹	3		
	14		14		7

Junior

Fall	Hours	Spring	Hours
BIOL 5600 Mammalian Physiology (Biomedical Physiology)	6	PHIL 1030 Ethics and the Health Sciences	3
Core Social Science	3	BIOL 3500 Perspectives in Immunology	3
PHYS 1500 General Physics I	4	STAT 2510 Statistics for Biological and Health Sciences	3
		BIOL 3020 Genomic Biology	4
	13		13

Total Hours: 90

Student should declare a major when they have completed 60 hours.

- ¹ Students who plan to finish the Biomedical Sciences degree must choose COMM 1000.
- ² Students who choose a HIST sequence other than HIST 1010 and HIST 1020 should talk to an advisor about CORE SOC SCI choices.
- ³ Students may choose to take BCHE 5180 and BCHE 5190 to complete the Biochemistry requirement for HSOP. BCHE 5180/5190 may replace these courses, if student choose the 5180/5190 option over BCHE 3200.

Pre-Physical Therapy and Pre-Physician Assistant

Curriculum in Pre-Physical Therapy (PPHS) and Pre-Physician Assistant

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I	3	ENGL 1120 English Composition II	3
MATH 1610 Calculus I	4	Core History I	3
CHEM 1030 Fundamentals Chemistry I	3	CHEM 1040 Fundamental Chemistry II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	CHEM 1041 Fundamental Chemistry II Laboratory	1
BIOL 1020 Principles of Biology	4	BIOL 1030 Organismal Biology	4
SCMH 1890 Pre-Health Professions Orientation	1		
	16		14

Sophomore

Fall	Hours	Spring	Hours
PHYS 1500 General Physics I	4	PHYS 1510 General Physics II	4

CHEM 2070 Organic Chemistry I	3	PSYC 2010 Introduction to Psychology	3
CHEM 2071 Organic Chemistry I Laboratory	1	Core Social Science	3
Core History II	3	BIOL 3000 Genetics	4
Core Literature	3		
COMM 1000 Public Speaking	3		
	17		14
Junior			
Fall	Hours	Spring	Hours
BIOL 2500 Human Anatomy and Physiology I	4	BIOL 2510 Human Anatomy and Physiology II	4
BIOL 3200 General Microbiology	4	PHIL 1030 Ethics and the Health Sciences	3
Core Fine Arts	3	Psychology Elective	3
STAT 2510 Statistics for Biological and Health Sciences	3		
PSYC 3120 Developmental Psychology	3		
	17		10

Total Hours: 88

Students should declare a major when they have completed 60 hours.

- ¹ The Chemistry CHEM 1110/CHEM 1111- CHEM 1120/CHEM 1121 sequence can substitute for CHEM 1030/CHEM 1031- CHEM 1040/CHEM 1041. See advisor for details.
- ² Students who complete a HIST sequence other than HIST 1010 and HIST 1020 should see an advisor for CORE SOC SCI choices.

Majors

Minors

College of Veterinary Medicine

THE COLLEGE OF VETERINARY MEDICINE offers a fully accredited program of training leading to the degree of doctor of veterinary medicine. The degree requires four years in the professional curriculum after completion of a pre-professional curriculum which may take four years or more for the average applicant.

Admission

Each year, approximately 120 students are admitted to the four-year program for the doctorate in veterinary medicine. Admitted students are residents of Alabama; residents of Kentucky or West Virginia, admitted by contract through the Southern Regional Education Board (SREB); or at-large residents (non-Alabama and non-contract students). Alabama and SREB students must have a minimum GPA of 2.5 on a 4.0 system on all course work attempted. A grade of D on any required course will not be accepted. At-large (non-Alabama and non-SREB) students must have a minimum GPA of 3.0 on a 4.0 scale. At-large applicants must be citizens of the United States and will be required to pay non-resident university fees. As part of the admissions process, the Committee on Admissions and Standards of the College of Veterinary Medicine may require a personal interview, a reading comprehension test or an examination on any required course. The College of Agriculture, the College of Sciences and Mathematics and the School of Forestry and Wildlife Sciences offer Pre-Veterinary curricula and are responsible for pre-veterinary counseling. In addition to academic requirements, candidates are expected to have animal experience and to have worked with a veterinarian.

All applicants must apply through the Veterinary Medical College Application Service (VMCAS). Additional information, including an electronic application, is available from the Association of American Veterinary Medical Colleges at <http://www.aavmc.org/>. Kentucky

and West Virginia students must provide proof of residency from their college/university or from their state council on post-secondary education.

Minimum Requirements for Pre-Veterinary Medicine

A bachelor's degree or completion of the Core Curriculum as stated in the General Information section in this *Bulletin*.

Specific Course Requirements

Minimum pre-veterinary requirements for Alabama residents are those listed for the pre-veterinary curriculum in either the College of Agriculture, College of Sciences and Mathematics or the School of Forestry and Wildlife Sciences. Non-Alabama and SREB applicants must have acceptable equivalents which have been approved by the College of Veterinary Medicine. Individuals taking the pre-veterinary curriculum are expected to declare an academic major no later than their second year of enrollment.

All transfer courses must be equivalent in hours and content. Courses will not be waived on the basis of degrees or "practical experience." Pass-Fail or Satisfactory-Unsatisfactory grades are not acceptable in required courses. Consideration will not be extended to anyone with an overall GPA of less than 2.5 or anyone who is not a bona fide resident of Alabama, Kentucky, or West Virginia at the time of application (Non-resident/non-contract students must have a GPA of 3.0 or better).

Time Limitation

All required courses in the advanced physical and biological science categories must have been completed within six calendar years prior to the anticipated date of enrollment in the College of Veterinary Medicine.

Standardized Examination

Applicants must complete the Graduate Record Examination (verbal and quantitative) within five calendar years prior to the anticipated date of enrollment. Results of the GRE must be officially reported to the Office of Academic Affairs, College of Veterinary Medicine by November 1.

Application Procedure

Admission to the College of Veterinary Medicine must be gained through formal application made by October 1 preceding the fall semester in which admission is desired. All applicants must be citizens of the United States.

The electronic application is available from the Association of American Veterinary Medical Colleges (www.aavmc.org (<http://www.aavmc.org>)). An Auburn University College of Veterinary Medicine supplemental application and processing fee of \$50 is required of all applicants. An additional \$50 is required upon acceptance of all who have not previously attended Auburn University.

The final selection of students is made by the Committee on Admissions and Standards of the College of Veterinary Medicine, Auburn University. The right is reserved to accept or reject any applicant.

Under the Regional Plan for Veterinary Training, the College of Veterinary Medicine currently serves Alabama, Kentucky, and West Virginia. The land-grant institution in each state participating under the SREB plan maintains counseling and guidance service for students desiring admission to the College of Veterinary Medicine. Students attending other institutions should contact the pre-health profession advisor in their state for information concerning admission requirements.

Scholastic Requirements

All applicants and students in the professional program are subject to the academic and disciplinary regulations of the College of Veterinary Medicine in addition to those of Auburn University.

Any student who earns less than a 2.25 GPA for any term will be placed on academic probation. A student who fails to earn a 2.25 GPA in each of the succeeding two terms of enrollment will be dropped from the rolls of the College of Veterinary Medicine for scholastic deficiency. In addition, a student who does not have a veterinary college cumulative average of 2.25 at the end of any academic year may be required to withdraw from the College of Veterinary Medicine.

Any student who receives a D in any course will be placed on academic probation. If the student receives a second D in the same calendar year or academic year, they will be required to withdraw from the College of Veterinary Medicine.

A student will be removed from academic probation after two terms, assuming they have met the terms of probation.

A student who makes a grade of F on any course will be required to withdraw from the College of Veterinary Medicine. If a student who is dismissed for academic reasons is readmitted, they may be required to repeat additional courses as deemed necessary by the Admissions and Standards Committee.

Clinical courses are unique in that the art and skills developed in them can be acquired only through full participation in the laboratories. Attendance in these courses is required except in case of illness or other extenuating circumstances as may be judged by the involved instructor. Grading in these clinical laboratory courses is primarily by subjective evaluation. When a course involves student rotation through several disciplines or sections, the student must receive a passing grade in each area before a passing grade can be given for the course. Any student who earns a D or F in any clinical rotation will be placed on academic probation. If the student receives a second F during clinical rotations, that student will be required to withdraw from the college of Veterinary Medicine. If the student receives a second and third D or F during clinical rotations, that student will be required to withdraw from the College of Veterinary Medicine. If the college admissions and standards committee permits re-admission, the student may be required to repeat all clinical experiences to meet the requirements for the clinical year.

The responsibility for counseling is shared by the faculty of this College and the Department of Clinical Psychology.

Non-Scholastic Requirements

Applications may receive provisional acceptance after they submit the application form and current academic documents. However, they must complete and return a medical examination report form provided by the university at least three weeks before the term opens.

Health Insurance: Students enrolled in the professional curriculum are required to provide evidence of health insurance coverage. Information about student insurance is available in the College of Veterinary Medicine, Office of Academic Affairs.

Required Withdrawal

The faculty of the College of Veterinary Medicine reserves the right to require the withdrawal at any time of any student who in the judgment of the admissions and standards committee is not profiting from the instruction offered, who is neglectful, irregular, dishonest or indifferent in the performance of required duties and studies or whose character or conduct is inconsistent with good order of the veterinary college or with the standard of the veterinary profession.

Requirements for Graduation

To be eligible for the DVM degree, candidates must complete all of the required courses in the order listed in the curriculum in veterinary medicine along with at least four hours of elective credit, with a minimum overall GPA of 2.25. In addition, each senior must participate in a clinicopathologic conference (CPC) to fulfill their oral communication requirement. Following completion of all academic work, each student is required to serve a preceptorship of eight weeks with an approved veterinarian. A certificate of satisfactory completion of a preceptorship is required for graduation.

A graduation fee must be paid at the beginning of the term of graduation and all indebtedness due the institution must be paid prior to graduation.

Major

- Veterinary Medicine (https://bulletin.auburn.edu/undergraduate/collegeofveterinarymedicine/veterinarymedicine_major)

Minor

- Public Health (p. 406)

Program

- Anatomy, Physiology and Pharmacology (p. 483)
- Veterinary Clinical Sciences (p. 547)

Curriculum in Veterinary Medicine

Fall	Hours Spring	Hours
VMED 5000 Orientation to Veterinary Medicine	0 VMED 5022 Problem-Solving in Veterinary Medicine II	1
VMED 5010 Veterinary Medical Ethics	1 VMED 5120 Physiology II	4
VMED 5012 Problem-Solving in Veterinary Medicine I	1 VMED 5121 Veterinary Anatomy II	3
VMED 5110 Physiology I	5 VMED 5141 Organology of Domestic Animals	2
VMED 5111 Veterinary Anatomy I (Small Animal)	4 VMED 5150 Diagnostic Imaging	2
VMED 5130 Cell Physiology and Molecular Genetics	2 VMED 5151 Veterinary Neurosciences	5
VMED 5131 Basic Microanatomy/Domestics Animals	3 VMED 5210 Veterinary Parasitology II	2
VMED 5180 Veterinary Ethology	1 VMED 5301 Physical Diagnoses of Large and Small Animals	2
VMED 5200 Veterinary Parasitology I	3 Electives	1-2

P2

Fall	Hours Spring	Hours
VMED 5220 Principles of Veterinary Pathology	3 VMED 5020 Veterinary Medicine and the Law	1
VMED 5270 Introduction to Cytology	1 VMED 5030 Veterinary Public Health	4
VMED 5230 Veterinary Clinical Pathology	3 VMED 5042 Problem Solving in Veterinary Medicine IV	1
VMED 5240 Principles of Veterinary Immunology	3 VMED 5310 Introduction to Surgery	2
VMED 5250 Principles of Veterinary Infectious Disease	4 VMED 5520 Cardiovascular System	2
VMED 5260 Veterinary Pharmacology	3 VMED 5530 Respiratory System	3
VMED 5510 Hemolymph/Integumentary System	4 VMED 5540 Alimentary System	5
Electives	1-3 VMED 5940 Introduction To Anesthesia	3
	Electives	1-3

P3

Fall	Hours Spring	Hours
VMED 5052 Problem Solving in Veterinary Medicine V	1 VMED 5320 Clinical Veterinary Nutrition	2
VMED 5311 Surgical Practicum	2 VMED 5340 Emergency Medicine and Critical Care	2
VMED 5330 Multispecies Medicine	3 VMED 5350 Veterinary Toxicology	3
VMED 5550 Urinary System	2 VMED 5360 Production Preventative Medicine	3
VMED 5560 Endocrine System	2 VMED 5601 Veterinary Clinical Rotations	3
VMED 5570 Reproductive System	5 VMED 5930 Special Senses	1
VMED 5580 Nervous System	2 VMED 5370 Oncology	1
VMED 5590 Musculoskeletal System	3	
VMED 5262 Clinical Pharmacology and Therapeutics	1	

Electives 1-3

Sophomore

Fall	Hours
VMED 5220 Principles of Veterinary Pathology	3
VMED 5230 Veterinary Clinical Pathology	3
VMED 5240 Principles of Veterinary Immunology	3
VMED 5250 Principles of Veterinary Infectious Disease	4
VMED 5260 Veterinary Pharmacology	3
VMED 5510 Hemolymph/Integumentary System	4
VMED 5270 Introduction to Cytology	1
VMED 5380 Physical Diagnosis II	1

SUMMER

Summer	Hours
VMED 5601 Veterinary Clinical Rotations	3
VMED 5601 Veterinary Clinical Rotations	3
VMED 5601 Veterinary Clinical Rotations	3

P4

Fall	Hours	Spring	Hours
VMED 5601 Veterinary Clinical Rotations	3	VMED 5601 Veterinary Clinical Rotations	3
VMED 5601 Veterinary Clinical Rotations	3	VMED 5601 Veterinary Clinical Rotations	3
VMED 5601 Veterinary Clinical Rotations	3	VMED 5601 Veterinary Clinical Rotations	3
VMED 5601 Veterinary Clinical Rotations	3	VMED 5611 Veterinary Clinical Rotations-Electives	3
		VMED 5801 Preceptorship	3
		VMED 5950 Clinicopathologic Conference	0
		UNIV 4AA0 University Graduation	0

TOTAL HOURS - 157

Rotations will be set up in blocks of two 2-week rotations.
There are 24 2-week rotations that each student must complete, 15 are required rotations and 9 are elective rotations that the student must select from an approved list.

Minors

Minor

- Public Health (p. 406)

Veterinary Medicine Minors

Public Health

VBMS 2100	Introduction to Public Health	3
VBMS 3010	Introduction to Epidemiology	3

VBMS 4980	Undergraduate Research	3
HADM 4830	Comparative Health Care Systems	3
Elective (approved by Advisor)		3
Total Hours		15

Interdepartmental and Interdisciplinary Curricula

- Biosystems Engineering (BSEN)
- Ecological Engineering (ECEN)
- Environmental Science (ENVI)
- Forest Engineering (FOEN)
- Materials Engineering (MATL)
- Interdisciplinary University Studies (IDSC)

Biosystems Engineering (BSEN)

The curriculum in biosystems engineering is coordinated by the Samuel Ginn College of Engineering. See the Department of Biosystems Engineering in the Samuel Ginn College of Engineering for further information. The curriculum in Biosystems Engineering is coordinated by the Samuel Ginn College of Engineering and prepares students for productive careers in the biosystems industries and related natural resource and environmental systems sectors. See the Department of Biosystems Engineering in the Samuel Ginn College of Engineering for further information.

Ecological Engineering (ECEN)

The curriculum in ecological engineering is coordinated by the Samuel Ginn College of Engineering and prepares students to solve environmental problems by applying engineering knowledge to natural ecological and biological systems. See the Department of Biosystems Engineering in the Samuel Ginn College of Engineering for further information.

Environmental Science (ENVI)

The curriculum in environmental science is an interdepartmental program based on the strengths of Auburn University in the engineering, biological and physical sciences. See the Department of Civil Engineering in the Samuel Ginn College of Engineering for further information.

Forest Engineering (FOEN)

The School of Forestry and the Samuel Ginn College of Engineering coordinate the curriculum in forest engineering. The curriculum in Forest Engineering is coordinated by the Samuel Ginn College of Engineering and the School of Forestry and prepares students for professional careers in forest products industry and related natural resource and environmental systems sectors. See the Department of Biosystems Engineering in the Samuel Ginn College of Engineering for further information.

Materials Engineering (MATL)

The curriculum in materials engineering is an interdisciplinary curriculum conducted cooperatively by departments in the Samuel Ginn College of Engineering and the College of Sciences and Mathematics. See the Department of Mechanical Engineering in the Samuel Ginn College of Engineering for further information.

The Bachelor of Science in Interdisciplinary University Studies allows students to attain a broad education and acquire diverse skill sets unique to a profession they desire to enter. Students seeking an Interdisciplinary University Studies degree have the opportunity to create a personalized academic program, by customizing a curriculum that demonstrates proficiency in broad skills as well as discipline-specific knowledge.

Interdisciplinary University Studies (IDSC)

The Bachelor of Science in Interdisciplinary University Studies allows students to attain a broad education and acquire diverse skill sets unique to a profession they desire to enter. Students seeking an Interdisciplinary University Studies degree have the opportunity

to create a personalized academic program, by customizing a curriculum that demonstrates proficiency in broad skills as well as discipline-specific knowledge.

Admission is determined by application. For admission, a student must first complete Foundations of Interdisciplinary University Studies (UNIV 2190) with a grade of C or better and complete a program application that includes an application essay and an approved individualized plan of study. In the Foundations course, students learn about interdisciplinary studies in general and also craft an individualized degree plan. Students must have an overall Auburn University GPA of 2.0 or higher, or a GPA of 2.2 or higher on the most recent semester's coursework at Auburn University to be eligible for admission. Students must have completed at least 30 hours of coursework prior to being admitted. Students with more than 90 hours of coursework must receive special permission to be admitted to the major.

Students who have completed Foundations of Interdisciplinary University Studies (UNIV 2190) with a grade of C or better may submit an application. Students admitted to the major must also earn a grade of C or better in Public Speaking (COMM 1000), and in one written communication class to be selected from Technical Writing (ENGL 3040), Business Writing (ENGL 3080) or Advanced Composition (ENGL 4000). Students may elect to use COMM 1000 to meet 3 hours of the Humanities Core requirements. All students must also complete a capstone experience (UNIV 4930 or UNIV 4980) with a grade of S in UNIV 4930 or a grade of C or better in UNIV 4980. In the capstone experience, students integrate acquired knowledge through a research project (UNIV 4930), service learning project (UNIV 4980), or an internship program (UNIV 4980). Students must earn 3 hours of capstone credit and may earn a maximum of 6 hours of capstone credit. Students electing to take the capstone course twice must use elective hours for the additional three hours. There must be at least one semester between the time the student takes UNIV 2190 and either UNIV 4930 or 4980.

The student creates two or three identifiable areas of emphasis using coursework from two or three different Schools or Colleges. The major must have a total of 45 hours of approved coursework. If a student elects to have two areas of emphasis they must have at least 21 hours of coursework in one emphasis (the majority of which is from one college or school) and up to 24 hours in the other (the majority of which is from the second college or school) for a total of 45 hours. If a student elects to have three areas of emphasis they must have 15 hours of coursework in each emphasis. Students with three areas of emphasis may use existing minors as emphasis areas or they may work with the faculty advisor in a specific area to develop an emphasis. Twenty-five of the 45 hours in the major must be at or above the 3000 level. If a student elects to use existing minors and a minor requiring more than 15 hours is selected the student must complete the entire minor. Minors used as emphases become part of the Interdisciplinary Studies degree and will not be listed on the official transcript or the diploma.

Additional information about the major can be found at http://www.auburn.edu/academic/provost/undergrad_studies/IDSC.

Interdisciplinary University Studies

Course List

Auburn University Core Curriculum (old or new core curriculum)		41-42
Introductory Course to Interdisciplinary Studies ¹		3
UNIV 2190	Foundations of Interdisciplinary University Studies	
Interdisciplinary Supporting Coursework		
Oral Communications ^{1,2}		3
Advanced Written Communication ¹		3
Select one of the following: (each course is 3 hours)		
ENGL 3040	Technical Writing	
ENGL 3080	Business Writing	
ENGL 4000	Advanced Composition	
Capstone Experience ¹		3
UNIV 4930	Interdisciplinary Capstone Experience	
or UNIV 4980	Interdisciplinary Capstone Experience	
Major Course Hours ^{3,4}		45
Prerequisites/Major Supporting Courses/Electives ⁵		Varies
Minimum Number of Required Hours		120

Footnotes

- ¹ Must have grade of C or better (S in UNIV 4980).
- ² Oral Communication (COMM 1000) may be used to satisfy 3 hours of Humanities in the University Core Curriculum.
- ³ Major course hours are used to calculate the GPA in the major.
- ⁴ Total of 45 hours selected across two emphases (at least 21 hours in one emphasis and no more than 24 hours in the second emphasis) or across three emphases (each with 15 hours). Emphases must be selected from at least two different Schools or Colleges. Approval of the appropriate faculty advisor, program director or department head for courses in each emphasis is required. Students may use existing minors for emphases. The Director of the IDSC Program must approve the application for admission to the degree program.
- ⁵ Total number of prerequisite/major supporting course/elective hours varies depending on choices made. Students who elect to use existing minors with more than 15 hours must use elective hours to complete the minor; students who elect to take a second capstone must use elective hours for the second course. Elective hours may also be used to allow the student to complete a minor outside of their areas of emphasis and must be used to bring the total number of hours in the students degree plan to 120. The minors used as emphases become part of the Interdisciplinary Studies degree and will not be listed on the official transcript or diploma.

Interdepartmental and Interdisciplinary Courses and Minors

- Statistics
- Biochemistry
- Molecular Biology
- Sustainability Studies
- Leadership

Statistics

While graduate degrees in statistics are offered through the Department of Mathematics and Statistics in the College of Sciences and Mathematics, courses in statistics, both general introductory courses and those treating the application of statistics to specific disciplines or problems, are offered through the cooperation of many departments and colleges throughout the university. Students interested in receiving training in statistics to support their degree program should consult their advisor and the listing of statistics courses in the "Courses of Instruction" section of this *Bulletin*, under the heading "STAT."

Undergraduate Statistics Minor

Select one of the following Series (each course is 3 hours):

6

Series A

STAT 3600 Probability and Statistics I

STAT 3610 Probability and Statistics II

Series B

STAT 3010 Statistics for Engineers and Scientists

STAT 4020 Intermediate Statistical Method

Select three of the following:

9

STAT 4610 Applied Regression Analysis

STAT 4620 Applied Nonparametric Statistics

STAT 4630 Applied Time-Series Analysis

STAT 5110 SAS Programming and Applications

STAT 5630 Sample Survey, Design and Analysis

Total Hours

15

Biochemistry

While degrees in chemistry/biochemistry are offered through the Department of Chemistry and Biochemistry in the College of Sciences and Mathematics, courses in biochemistry, required in or relevant to many degree programs, are offered through the cooperation of many departments and colleges throughout the university. Students interested in training in biochemistry to support their degree program should consult their advisor and the listing of biochemistry courses in the "Courses of Instruction" section of this Bulletin, under the heading "BCHE."

Molecular Biology

While degrees in microbial, cellular, and molecular biology, as well as some undergraduate courses, are offered through the Department of Biological Sciences in the College of Sciences and Mathematics, graduate courses in molecular biology, required in or relevant to many degree programs, are offered through the cooperation of many departments and colleges throughout the university. Students interested in graduate-level training in molecular biology should consult their advisor and the listing of molecular biology courses in the "Courses of Instruction" section of this Bulletin, under the heading "CMBL."

Minor in Sustainability Studies

15 semester Hours in minor (minimum 9 hours at 3000-level or above)

SUST 2000	Introduction to Sustainability	3
SUST 5000	Senior Capstone in Sustainability	3
Approved Electives ¹		9
Total Hours		15

¹ Approved electives, see Office of Sustainability website for listing. www.auburn.edu/sustainability.

Minor in Leadership

Auburn University offers an Interdisciplinary Leadership Minor (ILM). In order to pursue a minor in leadership, students should file a Plan of Study, in consultation with the ILM advisor/coordinator as early as possible. The Plan of Study is ideally completed within the first semester of taking courses toward the minor. The completion and filing of the Plan of Study is a prerequisite to enrolling in the senior capstone class in the ILM. Courses required in the student's major may not be counted toward the minor even if they are on the list of accepted courses. Courses counted toward Core Curriculum requirements may not be counted toward the minor. At least 3 hours must be taken from each of five competency areas, with 9 of the 15 hours at the 3000 level or above. The competency areas are: I. Leadership Knowledge and Theory, II. Communication, III. Problem Solving and Decision Making, IV. Vision of Civic and Social Responsibility, and V. Service Learning.

15 semester Hours in minor (minimum 9 hours at 3000-level or above)

Leadership Knowledge and Theory

UNIV 2000	Foundations of Leadership	3
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Service Learning

UNIV 4000	Leadership in Practice	3
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Communication

Select 3 hours:		3
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MNGT 3460	Organizational Behavior
POLI 3340	Introduction to Conflict Resolution
POLI 5340	Theory and Practice of Mediation
PSYC 3580	Social Psychology
AGRI 5840	Advanced Agricultural Leadership Development
COMM 1000	Public Speaking
COMM 2400	Communication in Organizations
COMM 2410	Small Group Communication
COMM 3450	Intercultural Communication
COMM 3100	Speaking Before Audiences

Problem Solving and Decision Making

Select 3 hours: 3

PHIL 3660	Applied Ethics
POLI 3340	Introduction to Conflict Resolution
POLI 5340	Theory and Practice of Mediation
MNGT 3100	Principles of Management
MNGT 3810	Management Foundations

Civic and Social Responsibility

Select 3 hours: 3

SOCY 1000	Sociology Global Perspective
SOCY 2200	Social Psychology: Sociological Perspectives
SOCY 3500	Minority Groups
POLI 3090	Introduction to International Relations
POLI 3100	Introduction to World Affairs
POLI 3290	The American Presidency
POLI 4050	American Local Government
POLI 5610	Women in Politics
POLI 5620	African American Politics
SOCY 2000	Social Issues
SOCY 3500	Minority Groups
RSOC 3620	Community Organization
HDFS 5300	Family and Social Policy
ANSC 4800 & ANSC 4970	Issues in Animal Agriculture and Special Topics in Animal Sciences

Total Hours

15

Reserve Officers' Training Corps

Departments

- Department of Air Force Aerospace Studies (p. 411)
- Department of Military Science (p. 413)
- Department of Naval Science (p. 415)

Air Force Aerospace Studies

LIEUTENANT COLONEL JEFFREY HEMMES

Commander and Professor of Aerospace Studies

Four-Year Program

The Air Force Reserve Officer Training Corps (ROTC) is an educational program designed to give men and women the opportunity to become an Air Force officer while completing an undergraduate degree. The Air Force ROTC program is designed to teach the necessary skills needed to accept the challenging opportunities encountered in the Air Force. Air Force ROTC offers a pathway from college to many exciting career possibilities as an Air Force officer: flying, engineering, intelligence, computer systems, aircraft maintenance, management, etc. Interested students should contact the Air Force ROTC department (www.auburn.edu/afrotc); det005@maxwell.af.mil; 243 Nichols Center; 334-844-4355).

General Military Course (GMC)

The GMC is the first half of the program and is taken during the freshman and sophomore years. This program allows the student to "try out" Air Force ROTC without obligation (students on an Air Force ROTC scholarship incur an obligation upon the start of their

second GMC year). During the first two years, the student will learn basics about the Air Force and the historical development of airpower. GMC students may be eligible to compete for an Air Force ROTC scholarship that pays tuition and fees, and provides both an allowance for books and a non-taxable monthly stipend while school is in session. The classes are one semester hour each. During the spring semester of the sophomore year, the student will compete for the opportunity to attend a four-week Field Training encampment (see Field Training section below for additional information). Successful completion of field training is mandatory for entrance into the Professional Officer Course (POC), the junior and senior years of the program. Qualified students may enroll in both freshman and sophomore classes at the same time and spend only one year in the GMC if they are already in college and need only three more years to graduate.

AIRF 1010/1020	The Foundations of US Air Force	1
AIRF 2010/2020	Evolution of US Air and Space Power	1

Professional Officer Course (POC)

The POC is the second half of the program, taken during the junior and senior years. These classes are three semester hours each. POC students take on leadership roles, planning and running most cadet activities. This gives them valuable experience that prepares them to become an officer. Students in selected degree programs (e.g. engineering) may spend a third year in the POC to complete their degree. All POC members receive a monthly stipend, and those with an Air Force ROTC scholarship continue with their benefits (tuition, fees, books allowance). As a junior, the student will learn about various leadership roles and management techniques needed to become an effective Air Force officer. During the senior year, students will learn about foreign policy and national security while preparing them for entrance into active duty.

AIRF 3010/3020	Air Force Leadership Studies	3
AIRF 4010/4020	National Security Affairs and Preparation for Active Duty	3

Leadership Laboratory (LLAB)

Each Air Force ROTC student pursuing a commission in the Air Force is required to attend Leadership Laboratory; students not qualified for or not pursuing a commission may not enroll. Leadership Laboratory consists of a two-hour class, two one-hour periods of Physical training (PT) and up to two additional hours of practical military training each week. Although no academic credit is awarded by the university, LLAB is an essential part of officer training. It is a cadet-centered program where the student will learn such things as military customs and courtesies, drill and ceremonies, and proper wear of uniform, as well as develop their physical fitness. On occasion, the student will have the opportunity to hear guest speakers discuss a variety of interesting and stimulating topics or participate in fun team-building activities such as bowling and paintball.

Curriculum for Leadership Laboratory

AIRF 1011/1021	AFROTC Leadership Laboratory	0
AIRF 2011/2021	AFROTC Leadership Laboratory	0
AIRF 3011/3021	AFROTC Leadership Laboratory	0
AIRF 4011/4021	AFROTC Leadership Laboratory	0
Total Hours		0

Field Training (FT)

Cadets completing the General Military Course attend four weeks of FT during the summer at Maxwell Air Force Base, Alabama, and Camp Shelby, Mississippi. This rigorous program of leadership training, physical conditioning and academics assesses the cadet's potential to be an Air Force officer. Additionally, cadets also receive survival and firearms training, career information and one or more military aircraft orientation flights. Cadets receive travel pay and a daily allowance for attending FT.

Air Force ROTC Scholarships

Air Force ROTC offers scholarships on a competitive basis to high school seniors and college students. These scholarships are offered to highly qualified students, primarily in scientific/technical majors or nursing. Please visit www.afrotc.com (<http://www.afrotc.com>) for the latest information about scholarships.

Aerospace Studies Minor

The Department of Aerospace Studies offers a minor under the following conditions. Fifteen semester hours are required, nine of which must be upper-level.* A maximum of six credit hours must be utilized from AIRF 3010, AIRF 3020, AIRF 4010, or AIRF 4020. The remaining nine hours will come from electives determined by the department. See Core Curriculum (p. 72) for limitation.

General Military Course

Curriculum in the General Military Course

AIRF 1010/1020	The Foundations of US Air Force	1
AIRF 2010/2020	Evolution of US Air and Space Power	1
Total Hours		2

Professional Officer Course

Curriculum in the Professional Officer Course

AIRF 3010/3020	Air Force Leadership Studies	3
AIRF 4010/4020	National Security Affairs and Preparation for Active Duty	3
Total Hours		6

Military Science

LIEUTENANT COLONEL JEFFREY COPELAND
Commander and Professor of Military Science

The purpose of the Army ROTC program is to select, train, and motivate the future leadership of the active Army, Army National Guard and Army Reserve. The curriculum is available to both men and women and prepares students to become effective leaders and managers in a variety of challenging fields.

The Army ROTC curriculum is divided into two courses: a General Military Course open to all students and an Officer Development Course for qualified juniors, seniors and graduate students. The General Course serves to acquaint Auburn students with the Army and its role in our society; The Officer Development course prepares students for service as commissioned officers. Successful completion of both courses and award of a bachelor's degree constitute the normal progression to earning a commission as a Second Lieutenant. Students undecided about pursuit of a commission may participate in the General Military Course. This affords freshman and sophomore students the opportunity to make an informed decision on the advantages of an officer's commission while incurring no military obligation.

General Military Course (The Basic Course)

The Basic Course consists of a four-semester block of instruction normally taken during the freshman and sophomore years. Successful completion of MILS 1010, MILS 1020, MILS 2010 and MILS 2020 together with the associated labs (MILS 1011, MILS 1021, MILS 2011 and MILS 2021) satisfies the academic requirements for progression to the Officer Development Course. Two credit hours per semester are earned for the lecture and lab. Subject to departmental approval, students may complete all four courses in one academic year.

Curriculum in the General Military Course

The basic military science courses provide unique classroom and hands-on instruction in orienteering, small unit tactics, first aid, physical fitness, and leadership skills. They introduce the student to the Army as a profession, lay the foundation of value-based, ethical decision-making, illuminate the Army's place in society and lay the foundation for the Officer Development Course that follows. The Professor of Military Science may admit the student to the Advanced Program upon completion of these courses.

Courses are offered in the fall and spring semesters and credits earned may be applied as elective credits toward degree requirements in all schools of the university.

Optional Leadership Training Course

Otherwise qualified students who are unable to complete the Basic Course during their freshman and sophomore years may qualify for admission to the Advanced Course by successfully completing the Leadership Training Course at Fort Knox, Kentucky.

The Leadership Training Course consists of approximately four weeks of training conducted during the summer months. Students desiring to exercise this option are required to submit a formal application and pass a general physical. Students who participate in the Leadership Training Course will receive approximately \$700 in addition to travel expenses to and from Fort Knox. Uniforms, housing, medical care and meals are furnished by the government during training.

Interested students are strongly encouraged to enroll in a military science course and laboratory during the spring semester. Deadline for applications is March 15, all applicants must contact the Military Science Department no later than March 1.

Officer Development Course (The Advanced Course)

Successful completion of the General Military Course or approved alternative training, a minimum 2.0 grade-point average, and medical qualifications are pre-requisites for enrollment in the Officer Development Course. Service veterans, transfer students from junior or military colleges, members of the National Guard or Army Reserve, and former military academy cadets may qualify for direct entry into the Officer Development Course two academic years before their projected graduation.

The Advanced Course is designed to develop a candidate's leadership and management potential, physical stamina, and poise, as well as the character traits desired of an Army Officer. The program's objective is to produce the highest caliber junior officer, fully capable of accepting command in the modern Army, exercising management responsibilities and serving the broader community.

The Advanced Course consists of a four-semester block of instruction taken during the junior and senior years (MILS 3010, MILS 3020, MILS 4010 and MILS 4020). Successful completion of the courses, together with a leadership laboratory (MILS 3011, MILS 3021, MILS 4011 and MILS 4021) each semester fulfills military science academic requirements for award of an officer's commission. Three credit hours per semester are earned for the lecture and laboratory. Students currently receive a tax-free subsistence allowance of \$450 (juniors) and \$500 (seniors) while enrolled.

Students enrolled in the Officer Development Course are required to successfully complete approximately four weeks of leadership training at Fort Lewis, Washington, during the summer to become eligible for commissioning. Attendance at the Leadership Development Assessment Course normally occurs in the summer following the junior year. The purpose of the course is to provide each candidate hands-on experience in leadership development as well as extensive training in military tactics, techniques and related subjects vital to success as a junior officer. Students attending the Leadership Development Assessment Course receive approximately \$700 in addition to travel expenses to and from Fort Lewis. Uniforms, housing, medical care and meals are furnished by the government during the training.

Additional voluntary training at one or more of a variety of active Army service schools is available to select students each summer. Students may apply for attendance at Airborne School, Air Assault School, The Northern Warfare Training Center and Cadet Troop Leadership Training. Students who successfully complete the appropriate course are authorized to wear the Parachutist, Air Assault or other applicable skill badge.

Students who successfully complete the Army ROTC curriculum, and earn a bachelor's degree, serve on active duty or with the Army National Guard or Army Reserve. Active duty is for a period of three or four years with the opportunity for qualified officers to apply for extended service. Current salary and allowances for a single Second Lieutenant exceed \$42,000. Medical and other benefits are also provided at no cost.

Professional Military Education Requirements

All Army ROTC cadets seeking a commission are required to pass a Written Communication Skills course (currently fulfilled by the University Core Curriculum) and World Military History (HIST 3640). An alternate military history course may be substituted with the approval of the Professor of Military Science.

Simultaneous Membership Program

Second, third- and fourth-year students are eligible to participate in the Simultaneous Membership Program with the Army National Guard or Army Reserve. Students participating in this program affiliate with an Army unit as a student officer, thus affording them the opportunity for enhanced leadership development. Students in this program receive a salary, additional tax-free benefits and GI Bill educational benefits (if otherwise qualified).

Military Science Minor

The Department of Military Science offers a minor under the following conditions. Fourteen semester hours in Military Science [MILS] are required, including 12 at the 3000/4000-level, and a three-hour 3000-level Military History course. (See p. 16 on limits.)

Scholarship Programs

Each year the Army offers a limited number of four-year, three-year and two-year scholarships to those young men and women who have demonstrated outstanding scholastic, athletic and leadership potential. Scholarships are available on a campus competitive basis and pay most or all of the cost of tuition, textbooks, supplies and fees for both resident and non-resident students. Additionally, scholarship students receive a \$300 to \$500 month tax-free allowance.

Army Nurse Corps Option

Students enrolled in the School of Nursing curriculum leading to the degree of bachelor of science in nursing may simultaneously pursue commissions as Second Lieutenants in the Army Nurse Corps.

Nursing students qualify for entry into the Officer Development Course by the same methods as other candidates and participate in the same summer Leadership Development Assessment Course as well. Nursing students may also receive practical and leadership experience during an additional nursing training program in a clinical setting at an Army hospital. The focus is to provide nursing cadets an experience that integrates clinical, interpersonal, and leadership knowledge and skills. Emphasis is on practical experience under the direct supervision of an Army Nurse Corps Officer who acts as the cadet's preceptor throughout the training period.

Nursing students compete for scholarships only against other nursing students and are eligible to compete for fully funded advanced schooling after serving an initial tour (three to four years) of active duty. Nurse Corps officers selected for advanced degree programs draw their regular salary and benefits while pursuing a specialized degree at Army expense. Participants in this program incur an additional active duty service obligation.

Naval Science

CAPTAIN R. N. FOX

Commanding Officer and Professor of Naval Science

The mission of the Naval ROTC is to develop NROTC students mentally, morally, and physically and to imbue them with the highest ideals of duty, honor, and loyalty; to commission college graduates as naval officers who possess a basic professional background, are motivated toward careers in the naval service, and have a potential for future development in mind and character so as to assume the highest responsibilities of command, citizenship, and government. All NROTC programs are open to qualified applicants. All Naval Science courses of one or more credits are open to all Auburn students regardless of affiliation with the NROTC Program.

To be eligible for enrollment as a midshipman, an applicant must be a United States citizen; have no moral obligations or personal convictions that will prevent bearing of arms, and supporting and defending the Constitution of the United States against all enemies, foreign and domestic; meet age requirements of at least 17 years on or before 1 September of the year of enrollment and less than 27 years on 30 June of the year an applicant expects to graduate; meet physical requirements for the NROTC Program; and be accepted for admission as a full-time student at Auburn University. Applicants with prior or current active duty in the U.S. Armed Forces may be granted age waivers equal to the number of months served, not to exceed 36 months. Those granted the maximum age waiver must be less than 30 years of age on 30 June of the year they expect to graduate.

NROTC Programs

Four-Year NROTC Navy-Marine Corps Scholarship

Entrance into the Navy-Marine Corps Scholarship Program is via nationwide competition. Applicants typically apply during their senior year of high school, but anyone who meets eligibility requirements and has completed less than 30 semester hours of college credit may apply. Qualifications for enrollment, applications, and information bulletins are available at <https://www.nrotc.navy.mil>, high schools, colleges, recruiting stations, and the Auburn NROTC Unit, located on the second floor of W. F. Nichols Center. The Department of the Navy pays tuition, fees, \$375 per semester for textbooks, and provides a monthly stipend. Freshmen on scholarship receive \$250, sophomores \$300, juniors \$350, and seniors \$400 per month. Active duty pay for summer training is approximately \$560 per month with living quarters and meals provided. The NROTC program divides degrees into three Tiers with Tier I containing engineering majors, Tier II remaining technical majors and Tier III liberal arts (for a complete list, see the Auburn NROTC home page). Although the program emphasizes engineering and science majors, students may enroll in any Auburn University major leading to a baccalaureate degree. In addition to the requirements of their major, scholarship students must complete 24 semester hours of

Naval Science courses, calculus I and II, calculus-based physics I and II, a military history/national security policy course and a world cultures course. Summer activities include two at-sea training cruises and one summer period of career orientation lasting for about four weeks. Marine Option students participate in a six-week orientation course at Quantico, VA in lieu of the second at-sea training cruise. Scholarship students may resign without obligation anytime prior to the beginning of their second year in the program. Successful completion of the ROTC program leads to a commission as an Ensign, U.S. Navy, or Second Lieutenant, U.S. Marine Corps.

Two-Year NROTC Navy-Marine Scholarship

Selections for this program are made on a national basis from nominations submitted by NROTC units or officer recruiters from around the country. Selected applicants attend the Naval Science Institute (NSI) in Newport, RI, for six weeks during the summer prior to their junior year. Successful NSI completion qualifies students for enrollment in the advanced course (junior year) of the NROTC Program. The two-year scholarship covers the final two years of college; provides tuition, fees, \$375 per semester for textbooks, and subsistence stipend for a maximum of 20 months. The program is open to college students who have completed their sophomore year or third year in a five-year curriculum. The deadline for application is 15 March of the applicant's sophomore year. Upon graduation students are commissioned as Ensigns, U.S. Navy, or Second Lieutenants, U.S. Marine Corps.

College Program

The College Program is a non-scholarship option that offers a two- or four-year program. There is no calculus or physics requirement and no preference for technical majors. Interested students should apply directly to the Auburn NROTC Unit during the fall of their freshman year for the four-year program or prior to the spring of their sophomore year for the two-year program. The program pays for uniforms and instructional fees for Naval Science courses. College Program students selected for advanced standing prior to their junior year receive a stipend for a maximum of 20 months. Advance standing is only available starting the junior year of college. Stipend per academic month is \$350 junior year and \$400 senior year. College Program students will complete Naval Science and other university courses, a few specific university courses, and attend one summer training session at sea for Navy Option midshipmen or Quantico, VA, for Marine Option midshipmen. When accepted, two-year applicants will attend the six-and-a-half week Naval Science Institute program in Newport, RI, during the summer between their sophomore and junior years. Upon graduation, two- and four-year College Program midshipmen may be commissioned Ensigns, U.S. Navy, or Second Lieutenants, U.S. Marine Corps.

Navy Nurse Corps NROTC Scholarship

The Navy pays tuition, fees, \$375 per semester for textbooks, all equipment, and uniform items within the BSN degree curriculum. Subsistence pay and active duty pay for summer training is equivalent to the pay provided by the Navy-Marine Corps Scholarship Programs. Students must major in a nursing program leading to a BSN degree. Naval Science course requirements for Nurse Option students consist of 12 semester hours of Naval Science courses and a world cultures course. Summer activities include one at-sea training cruise and one shore-based hospital training period. Nurse Corps NROTC scholarship eligibility and selection procedures are the same as regular four-year NROTC Scholarship Program requirements. Upon graduation, Nurse Corps NROTC Scholarship midshipmen are commissioned as Ensigns, U.S. Navy Nurse Corps.

Tweeddale Scholarship

The Professor of Naval Science (PNS) is allowed to award two Tweeddale Scholarships each year. The program focuses on students majoring in specific technical fields (e.g. Engineering, Mathematics, Computer Science, Chemistry, or Physics). A strong math/science background in high school and a B or better in calculus, if completed, is desired. Candidates will be interviewed by the PNS and must comply with Navy standards regarding leadership potential and military/physical fitness. As part of the application process, the candidate will submit a revised degree plan for review by the PNS. The degree plan must be verified by the students faculty advisor and must demonstrate that the student will be able to complete all Naval Science requirements and still graduate on time with his/her assigned class year group. Candidates must have completed at least one but no more than four academic terms with a cumulative GPA above peer mean or 3.0, whichever is higher. Transcripts must reflect a grade of C or better in all courses attempted. Candidates must have completed one academic term of college level math or science. Upon acceptance, the student is required to complete NAVS 1010 as soon as possible. The Navy pays tuition, fees, \$375 per semester for textbooks, and provides a monthly stipend the same as the four-year scholarship.

Naval Service Training Command (NSTC) Officer Development (OD) Controlled Scholarships

NSTC OD Controlled Scholarships, including Nurse Corps option, are awarded annually by NSTC OD. The Navy pays tuition, fees, \$375 per semester for textbooks, and provides a monthly stipend the same as the four-year scholarship. This program provides an avenue for the PNS to nominate College Program midshipmen who have demonstrated solid academic and professional performance and indicate potential for program completion and future commissioned service. The NSTC OD Controlled Scholarship Board meets twice per year to select scholarship nominees. NROTC College Program students must have received academic and aptitude marks in Naval Science for a period of at least one academic term prior to nomination. Students enrolled in Naval Science courses, but not members of the NROTC, who have received academic marks for a period of at least one academic term, may be nominated, provided

they enroll in the NROTC College Program prior to their nomination. Nominees should have a cumulative grade point average at least equal to the average of all students in the same college or degree program. However, all nominees with a cumulative GPA equal to or above 2.5 will be considered.

Uniforms, Naval Science textbooks, and equipment necessary for the NROTC Program are furnished in all programs.

Active Duty Service Requirements upon Graduation

Active duty service requirements for scholarship midshipmen vary depending on the warfare area they enter. The basic requirement is eight years, five of which must be on active duty. The remaining three years may be completed on active duty or in the reserves. Specific requirements per warfare community are as follows:

- Surface and Submarine Warfare - 8 years total, at least 5 on active duty
- Naval Aviator (Navy and Marine pilot) - 8 years active duty after qualification as a Naval Aviator
- Naval Flight Officer (Navy and Marine non-pilot aviators) - 6 years active duty after qualification as a Naval Flight Officer
- Marines and Nurse Corps - 8 years total, at least 4 on active duty

Curriculum

The Naval Science curriculum consists of one 3-credit class per semester for eight semesters. In addition, all NROTC students attend two 0-credit Naval Science laboratory class periods and two one-hour physical training sessions per week. Naval Science subjects are listed in this *Bulletin*. Naval Science course hours are considered part of the normal load, which is defined as 15 to 18 credits per semester. Six hours of Naval Science may be used as electives in any major.

Naval Science Minor

The Department of Naval Science offers a minor to any student, regardless of NROTC affiliation, who completes 15 semester hours of Naval Science, nine of which must be courses numbered 3000 or above. The following courses qualify:

NAVS 1010	Introduction to Naval Science	3
NAVS 1020	Seapower and Maritime Affairs	3
NAVS 2010	Leadership and Management	3
NAVS 2060	Navigation	3
NAVS 3030	Evolution of Warfare	3
NAVS 3050	Naval Ship Systems I (Engineering)	3
NAVS 3060	Naval Ship Systems II Weapons	3
NAVS 4020	Leadership and Ethics	3
NAVS 4030	Amphibious Warfare	3
NAVS 4050	Naval Operation and Seamanship	3
Total Hours		30

Undergraduate Faculty

The following is a list of full-time teaching faculty at Auburn University. The asterisk (*) before the name indicates the individual is a member of the Graduate Faculty. The date indicates the year of first appointment to any position in the institution.

A

*ABEBE-GEBREKIDAN, ASHEBER, Associate Professor, 2007, PhD Western Michigan, BS Addis Ababa (MATH)

*ABELL, ELLEN E., Associate Professor, 1993, PhD MA Washington State, BA Illinois (HDFS)

*ABERNETHY, AVERY M., Torchmark Professor and Chair, 1988, PhD South Carolina, BSBA North Carolina (MKTG)

*ACEVEDO, ORLANDO, Assistant Professor, 2006, PhD Duquesne, BS Florida International (CHEM)

*ACEVEDO, CHANTEL, Associate Professor, 2006, MFA BA Miami (ENGL)

*ADAMS, JENNIFER W., Associate Professor, 2005, PhD MA South Carolina BS Ball State (CMJN)

- *ADAMS, GARRY, Associate Professor, 2003, PhD Florida State,MBA BS Southern Illinois (MNGT)
- *ADAMS III, OLIN L., Associate Professor, 2000, PhD Ohio,MBA Mount St. Mary's,AB Centre (EFLT)
- *ADANUR, SABIT, Professor, 1992, PhD MS North Carolina State,BS Istanbul Tech (PFEN)
- *ADHIKARI, SUSHIL, Associate Professor, 2008, PhD Mississippi State,MS Asian Institute of Technology,BS Tribhuvan (BSEN)
- *ADLER-BAEDER, FRANCESCA, Professor, 2001, PhD MS North Carolina-Greensboro BA Pembroke (HDFS)
- *AGNE, ROBERT, Associate Professor , 2004, PhD Colorado, MA BS Dayton (CMJN)
- *AGRAWAL, PRATHIMA, Ginn Distinguished Professor and Director, Wireless Engineering Research and Education Center, 2003, PhD Southern California,M.S. Rochester,M.E. B.E. Indian Institute of Technology (ELEC)
- *AGRAWAL, VISHWANI, James J. Danaher Professor, 2003, PhD Illinois-Urbana-Champaign,ME Indian Institute of Science,BE Roorkee (ELEC)
- *AHMED, ANWAR, Professor, 1998, PhD MS Wichita State,BS Peshawar (AERO)
- AHYI, AYAYI CLAUDE, Assistant Research Professor, 1997, PhD Lille I MS USTL I (PHYS)
- *AKINGBEMI, BENSON, Associate Professor, 2004, PhD MSc DVM Ibadan (VMAP)
- ALABI, JAENA, Librarian II, 2011, MLIS, MA, BA, Alabama ()
- *ALBRECHT, ULRICH F., Professor, 1994, PhD New Mexico St.,PhD Duisburg,MS B.S Essen. (MATH)
- *ALDERMAN, CHARLES W., Professor and Dean of Enrollment Management, 1977, DBA Tennessee,MBA BS Auburn (ACCT)
- *ALEXANDER, TONI, Associate Professor, 2004, PhD MA Louisiana State,BA Cal State-Stanislaus (GEOL)
- *ALL, ANITA, Professor, MSN PhD Northern Colorado, BSN Wyoming (NURS)
- *ALLEN, BRENDA M., Assistant Professor, 1978, PhD Auburn,MS BS Tuskegee (FOWS)
- *ALLEN, JOHN M., Assistant Clinical Professor, 2011, PharmD Florida A&M (PYPP)
- ALLEN, DOUGLAS J., Hospital Director, 2009, MS Georgia,DVM Auburn (VMED)
- *ALLEY, KELLY D., Alumni Professor, 1991, PhD MA Wisconsin,BS Cornell (SOCY)
- ALMOND, GREGORY T., Assistant Clinical Professor, 2007, DVM Tennessee (VBMS)
- *ALTINDAG, DUHA, Assistant Professor, 2011, PhD MS Louisiana State,BA Bogazici (ECON)
- *AMIN, RAJESH H., Assistant Professor, 2009, PhD MS BS Wayne State (PYPS)
- ANDERSON, JEREMY B., Associate Professor, 2010, PhD ME Florida,BSCE North Carolina State (CIVL)
- *ANDERSON, CHRIS, Assistant Professor , 2008, PhD, Ohio State Univ; MS, Univ South Florida; BS, Virginia Tech (FOWS)
- *ANDRUS, MIRANDA R., Associate Clinical Professor, 2000, Pharm.D Samford (PYPP)
- *ANDRZEJEWSKI, CAREY E., Associate Professor , 2008, PhD MA Ohio State, MA Texas Woman's, BS Berry (EFLT)
- *ANGARANO, DONNA W., Associate Dean and Professor, 1986, DVM BS Missouri (VBMS)
- *ANGARANO, DONNA W., Associate Dean and Professor, 1986, BS DVM Missouri (VMED)
- *ANGELO, ADRIENNE, Associate Professor, 2009, PhD Emory,BA Groucher (FLNG)
- *APPEL, ARTHUR G., Professor and Chair, 1985, PhD MS California-Riverside,BA UCLA (ENPL)
- *ARCEDIANO, FRANCISCO, Assistant Professor, 2008, PhD ABDBA Deusto (PSYC)
- *ARIAS, COVADONGA R., Associate Professor, 2002, PhD BS Valencia Spain (FISH)

- *ARMBRUSTER, JONATHAN W., Alumni Professor, 1998, PhD BS Illinois (BIOL)
- *ARMENAKIS, ACHILLES A., Pursell Eminent Scholar and Professor, 1973, DBA Mississippi State, MBA BS Louisiana Tech (MNGT)
- *ARMSTRONG, JAMES B., Professor, 1990, PhD Virginia Tech, MS Abilene Christian, BS Freed-Hardeman (FOWS)
- *ARMSTRONG, EMILY M., Assistant Clinical Professor, 2009, PharmD Tennessee (PYPP)
- *ARNOLD, CHRISTOPHER, Associate Professor, 2003, MCP Auburn, BInd Auburn (INDD)
- *ARNOLD, ROBERT D., Associate Professor, 2012, PhD Buffalo-SUNY, BS Plattsburgh State-SUNY (PYPS)
- *ASHURST, WILLIAM ROBERT, Associate Professor, 2004, PhD California Berkeley, BS Auburn (CHEN)
- *AUAD, MARIA L., Associate Professor, 2006, PhD MS National Mar de Plata (PFEN)
- AULINO, TOM, Assistant Professor, 2012, MFA Pittsburgh, BS Northwestern (THEA)
- *AYOUN, BAKER M., Assistant Professor, 2007, PhD Oklahoma State, MBA Yarmouk Jordan, BBA Mu'tah Jordan (NDHM)
- AZHAR, SALMAN, Associate Professor, 2006, JD Alabama, PhD Texas A&M, MBC Florida, BS Auburn (BSCI)
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- *BACKSCHEIDER, PAULA R., Philpott-Stevens Eminent Scholar, 1992, PhD BA Purdue, MS Southern Connecticut State (ENGL)
- *BAGINSKI, MICHAEL E., Associate Professor, 1985, PhD MS BS Penn State (ELEC)
- *BAGINSKI, THOMAS A., Professor, 1984, PhD MSEE BSEE Penn State (ELEC)
- *BAILEY JR, L. CONNER, Professor, 1985, PhD Cornell, MA Ohio, BS Southern Oregon (AGEC)
- *BAIRD, SARA LYNN, Professor, 2009, PhD Florida State, MM Cincinnati, BM Florida State (MUSI)
- *BAKER, LAKAMI, Assistant Professor, 2008, PhD Texas-San Antonio, MS Texas, BS Prairie View A&M (MNGT)
- BALANCE, CONNOR, Assistant Research Professor, 1999, PhD Belfast, BS Belfast (PHYS)
- *BALDWIN, STEWART L., Professor, 1997, PhD BA Colorado (MATH)
- BALINT, BRENDAN, Instructor, 2007, PhD Loyola University (ENGL)
- *BANERJEE, TANNISTA, Assistant Professor, 2011, PhD MA Purdue, BA Jadavpur (ECON)
- *BANNON, SUSAN, Associate Professor and Director, Learning Resources Center, 1985, EdD Louisiana State, MEd BS Auburn (EFLT)
- *BARBAREE, JAMES M., Scharnagel Professor, 1991, PhD Georgia, MS BS Southern Mississippi (BIOL)
- *BARKER, LEWIS M., Professor, 2000, PhD MA Florida State, BA Occidental (PSYC)
- *BARLOW, BECKY, Assistant Professor, 2007, PhD MS BS Mississippi State (FOWS)
- *BARNES, ROBERT W., Mallett Associate Professor, 1999, PhD MSE Texas, BCE Georgia Tech (CIVL)
- *BARNETT, ROD, Professor, 2006, MS PhD Auckland, BS Waikato (ARCH)
- *BARNETT, MARK O., Malcolm Pirnie Professor, 1999, PhD North Carolina, MS BS Tennessee (CIVL)
- *BARRY, NANCY H., Professor, 2007, PhD MME Florida State, BM Middle Tennessee State (CTCH)
- *BARRY, MARY S., Associate Professor, 1993, PhD Purdue, MA Northeast Missouri State, BSEd Southeast Missouri State (CTCH)
- *BARTH, JAMES R., Lowder Eminent Scholar, 1989, PhD Ohio State, MA New Mexico, BS Cal State-Sacramento (FINC)
- BARTHEL, ELENA, Assistant Professor, 2010, PhD Florence (Italy), Diploma Laureate Arch Florence (Italy) (ARCH)
- *BARTLETT, RANDALL N., Professor, 1990, MPA Columbus State, BInd Auburn (INDD)

- *BARTOL, FRANK F., Associate Dean and Professor, 1983, PhD MS Florida,BS Virginia Tech (VMAP)
- BARTOL, FRANK. F., Associate Dean and Professor, 1983, PhD MS Florida,BS Virginia Tech (VMED)
- *BASKIYAR, SANJEEV, Associate Professor, 1999, PhD MSEE Minnesota,BE Indian Inst. of Science (COMP)
- BATCHELOR, WILLIAM D., Dean and Professor, 2010, PhD Florida,MS BS Georgia (AGRI)
- BAUMANN, MELISSA J, Professor and Assistant Provost-Undergraduate Studies, 2012 (MECH)
- *BEALE, DAVID G., Professor, 1989, BS Michigan Tech,PhD MSE Michigan (MECH)
- *BEARD, THOMAS R., Professor, 1988, PhD Vanderbilt,BA Tulane (ECON)
- *BECKER, THEODORE L., Holladay Professor, 1988, PhD Northwestern,MA Maryland,LLB Rutgers (POLI)
- *BECKWITH, GUY V., Associate Professor, 1980, PhD California-Santa Barbara,BA California-Santa Cruz (HIST)
- *BEHREND, ELLEN N., Joezy Griffin Endowed Professor, 1996, PhD Auburn,MS Colorado State,VMD Pennsylvania (VBMS)
- *BEIL JR, RICHARD O., Associate Professor, 1988, PhD Texas A&M,MS North Texas State,BBA Texas Tech (ECON)
- *BELL, LEONARD, Professor, 1994, PhD MS Minnesota,BA Virginia Tech (POUL)
- BELLAH, JAMIE R., Professor and Head, 2003, DVM Colorado State (VBMS)
- BELLHORN, THEODORE, Associate Clinical Professor, 2008, DVM Auburn (VBMS)
- *BELLONE, JESSICA M., Assistant Clinical Professor, 2010, PharmD Drake (PYPP)
- *BERGEN, WERNER G., Professor, 1995, MS BS PhD Ohio State (ANSC)
- *BERRY, WALLACE D., Associate Professor, 1995, PhD MS BS North Carolina State (POUL)
- *BERTOLET, ANNA RIEHL, Associate Professor, 2007, PhD MA BA Illinois (ENGL)
- *BERTOLET, CRAIG E., Associate Professor, 1997, PhD MA Pennsylvania State,BA Millersville (ENGL)
- *BEST, TROY L., Professor, 1996, PhD MS Oklahoma,BS E. New Mexico (BIOL)
- *BETANZOS, LOURDES, Associate Professor and Chair, 2001, PhD MA Tennessee,BA Rutgers (FLNG)
- *BEVLY, DAVID M., Philpott-Westpoint Stevens Professor, 2001, PhD MS MIT Stanford,BS Texas A&M (MECH)
- *BEZDEK, ANDRAS, Professor, 1997, PhD Eotvos,PhD Ohio State (MATH)
- *BHAVNANI, SUSHIL H., Burt Professor, 1987, PhD Iowa State, MS Indian Inst., BS Bangalore (MECH)
- *BIAN, MORRIS L., Associate Professor, 1998, PhD Washington,MA NE Normal,BA Mudanjiang (HIST)
- BIAZ, SAAD, Associate Professor, 2001, PhD Texas A&M,PhD MS BS Henri Poincare (COMP)
- *BILGILI, SACIT F., Professor and Extension Specialist, 1985, PhD Auburn,MS Oregon State,V.M.D. Ankara (POUL)
- *BILLOR, NEDRET, Associate Professor, 1992, PhD Sheffield,MS BS Turkey (MATH)
- *BIRD, R. CURTIS, Professor, 1985, PhD Toronto (VMED)
- BISHOP, BARBARA A., Librarian III, 1988, MALS BA South Florida ()
- *BLACKWELL, DIANA R., Assistant Director (HDFS)
- *BLAGBURN, BYRON L., Distinguished Professor, 1982, PhD Illinois,MS BS Andrews (VMED)
- *BLAKE, KIMBERLY BOSWORTH, Assistant Professor, 2011, PhD MBA West Virginia,PharmD BSpHarm Auburn (PYPC)
- *BLAKE, JOHN P., Professor and Extension Specialist, 1989, PhD Virginia Tech,MS Maine,BS Pennsylvania State (POUL)

BLOSS, CHRISTOPHER, Instructor, 2007, PhD University of S. Dakota, MA U of Missouri-Columbia, MA SW Missouri, BA U of Missouri-Columbia (ENGL)

*BLUMENTHAL, RIK, Associate Professor, 1992, PhD Penn State, BS UCLA (CHEM)

*BLUMSACK, JUDITH T., Assistant Professor, 2004, PhD Florida State. (CMDS)

BOBROWSKI, PAULA E., Associate Dean and Professor, 2006, PhD Syracuse, MBA BS Oregon (LBAR)

*BOBROWSKI, PAULA E., Associate Dean and Professor, 2006, PhD Syracuse, MBA BS Oregon (POLI)

*BOHANAN, DONNA J., Joseph A. Kicklighter Professor, 1982, PhD MA Emory, BA Hendrix (HIST)

*BOLTON, JONATHAN W., Professor, 1996, PhD Maryland, MA CUNY-Brooklyn, BA Miami (ENGL)

BONDY, BARBARA, Associate Professor, 2003, MFA So. Illinois, BFA Windsor (ARTS)

BOOSINGER, MARCIA L., Associate Dean and Head, 1986, MLS Alabama, MA BA Purdue ()

*BOOSINGER, TIMOTHY R., Dean and Professor, 1983, DVM PhD Purdue (VMED)

*BOOTHE, DAWN, Professor, 2003, D.V.M MS PhD Texas A&M (VMAP)

BOOTHE, HARRY W., Professor, 2003, MS Texas A&M, DVM Michigan State (VBMS)

BORNIER, EVELYNE, Assistant Professor, 2012, PhD Louisiana State University, MA Universite de Franche-Comte (FLNG)

*BOUDREAUX, MARY K., Professor, 1986, PhD Cornell, DVM LSU (VMED)

*BOURDEAU, BRIAN L., Associate Professor, 2005, PhD MS BSBA Florida State (MKTG)

*BOWEN, KIRA L., Professor, 1988, PhD Illinois, MS Minnesota, BS Penn State (ENPL)

BOWLING, SCOTT, Lab Coordinator, 2003, PhD Duke, MS Auburn, BS Tennessee (BIOL)

*BOWLING, CYNTHIA J., Associate Professor, 1998, PhD MA North Carolina, BA Tennessee (POLI)

*BOYD, ROBERT S., Professor, 1988, PhD California-Davis, MS BS Cal State Poly Technic (BIOL)

*BOYD, CLAUDE E., Butler Cunningham Eminent Scholar and Professor, 1971, PhD Auburn, MS BS Mississippi State (FISH)

*BOZACK, MICHAEL J., Professor, 1988, PhD Oregon, MA Western Baptist, MS Michigan State (PHYS)

*BRABHAM, EDNA G., Professor and Assistant Head, 1997, PhD MS BA Florida State (CTCH)

*BRADEN, TIMOTHY D., Associate Professor, 1994, PhD Colorado State, BS Oklahoma State (VMAP)

*BRADY, YOLANDA J., Associate Professor, 1984, PhD Auburn, MS Southern Mississippi BS Mississippi (FISH)

*BRANDEBOURG, TERRY, Assistant Professor, 2008, BS Purdue, PhD Oregon State (ANSC)

*BRANDON, DUANE M., Charles M. Taylor Associate Professor, 2003, PhD Virginia Tech, MAc Virginia Tech, BS Christopher Newport (ACCT)

*BRANSBY, DAVID I., Professor, 1987, PhD Natal, MS South Africa, MS Missouri (AGRN)

*BRANTLEY, EVE F., Assistant Professor and Extension Specialist, 2009, PhD Auburn, MS Clemson, BS Berry College (AGRN)

*BRATCHER, CHRISTY, Associate Professor, 2008, BS MS Florida, PhD Missouri (ANSC)

*BRAUND, KATHRYN, Holifield Professor, 2001, PhD Florida State, MA BS Auburn (HIST)

*BRAWNER JR, WILLIAM R., Ware Distinguished Professor, 1975, PhD DVM Auburn, MS Florida (VBMS)

*BRAXTON-LLOYD, KIMBERLY, Associate Professor, 1998, PharmD BS Pharm Auburn (PYPP)

BRINGARDNER, CHARLES, Assistant Professor, 2009, PhD Texas, BA Davidson (THEA)

*BRINSON, SUSAN L., Professor, 1990, PhD MA Missouri,BA Cameron (CMJN)

*BRITNELL, RICHARD E., Professor, 1991, MID BSED BFA Auburn (INDD)

*BROCK, SHERI J., Associate Professor, 2002, PhD Alabama,MS BS Troy State (KINE)

*BROCK, KENNY V., Professor, 1997, PhD Tennessee,MS DVM Auburn (VMED)

*BROOKS, JENNIFER E., Associate Professor, 2006, PhD Tennessee,BA Massachusetts-Boston (HIST)

*BROWN, MARY HELEN, Associate Professor, 1983, PhD Texas,MA Kentucky,BA Centenary (CMJN)

*BROWN, M. MITCHELL, Associate Professor, 2006, PhD MA Maryland,MA George Washington,BA Meredith (POLI)

*BROWN, STEVEN P., Lanier Associate Professor, 1998, PhD MA Virginia,BA Brigham Young (POLI)

BROWN, BOBBY, Director Lab Animal Health, 2006, DVM MS Auburn (VMED)

BROWN, ONIKIA, Assistant Professor, 2012, PhD Iowa State,RD Utah State,MS North Carolina AT State,BS Fort Valley State (NDHM)

BRUMBELOE, KELLY A., Instructor, 2006, MS BS Auburn (SERC)

*BRUNNER, BRIGITTA R., Professor, 2002, PhD Florida, MA Auburn BA Juniata (CMJN)

BRYANT, KELLY V., Professor, 2002, BFA MA Syracuse (INDD)

*BUB, KRISTEN, Assistant Professor, 2008, EdD MEd Harvard,BA Mount Holyoke (HDFS)

BUBB, ROBERT, Lecturer, 2011, MS BS Brigham Young (HDFS)

*BUCHANAN, ALICE M., Associate Professor, 1997, PhD Texas A&M,MEd Mississippi,BSEd Texas (KINE)

BUCHANAN, ROBERT A., Librarian III, 2003, MLS Buffalo-SUNY, PhD BS PhD Wisconsin ()

*BUCKHALT, JOSEPH A., Wayne T. Smith Distinguished Professor, 1979, PhD Vanderbilt,MS BA Auburn (SERC)

*BULLARD, STEPHEN A., Assistant Professor, 2008, PhD MS Southern Mississippi,BS South Carolina (FISH)

*BULLOCK, MARILYN J., Assistant Clinical Professor, 2009, PharmD Rutgers (PYPP)

BURCH, THOMAS E., Visiting Assistant Professor, 1992, PhD Louisiana State,MS BS Auburn (MECH)

*BURKHART, BARRY R., Professor, 1974, PhD MS BA Florida State (PSYC)

BURLESON, JAMES D., Associate Professor, 1986, MTheo Austin Seminary,MArch Rice,BED Texas A&M (ARCH)

BURMESTER, CHARLES H., Agronomist, 1980, MS BS Auburn (AGRN)

*BURNS, MARK, Associate Professor, 1975, BA Lambuth,PhD AM Indiana (POLI)

BURQUE, ANGELA D., Associate Clinical Professor, 1992, MSW Florida State,BSSW Alabama (SOCY)

BURRUS, EMBRY A., Associate Clinical Professor, 2002, MCD Auburn (CMD5)

*BURT, RICHARD, Professor and School Head, 2000, PhD Texas A&M,MS Texas A&M (BSCI)

*BURTON, MEGAN E., Assistant Professor, 2012, PhD Alabama,MEd Kennesaw State,BS Auburn (CTCH)

*BUSCHLE-DILLER, GISELA, Professor, 1995, PhD MS BS Stuttgart (PFEN)

*BUSKIST, WILLIAM F., Alumni Professor, 1982, PhD BS Brigham Young (PSYC)

*BUTLER, DANIEL D., Associate Professor, 1989, PhD South Carolina,MBA BSBA Central Florida (MKTG)

BYAHUT, SWETA, Assistant Professor (ARCH)

*BYRD, TERRY A., Bray Professor and Chair, 1992, PhD South Carolina,BSEE Mass-Amherst (AVMG)

BYRD, LINDA, Associate Clinical Professor, 2002, PhD Auburn,MSN UAB,BSN Florida State (NURS)

*BYRNE, MARK E., Daniel F. and Josephine Breeden Associate Professor, 2003, PhD MS Purdue,BS Carnegie Mellon (CHEN)

*BYUN, SANG-EUN, Associate Professor, 2006, PhD Michigan State,MS Kyung-Hee,BA Andong National-South Korea. (CAHS)

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*CALDERON, ANGELA I., Assistant Professor, 2008, PhD Laussane,MS Illinois-Chicago,BPharm Panama (PYPS)

CALDWELL, FRED J., Assistant Professor, 2005, DVM Auburn,MS BS Kentucky (VBMS)

CALHOUN, CATE, Librarian II, 2012, MALS Missouri; MA, North Carolina State; BA, Wake Forest ()

*CALLENDER, AIMEE, Assistant Professor, 2008, PhD MA Washington in St. Louis,BA Wheaton (PSYC)

*CAMMARATA, VINCENZO, Associate Dean and Associate Professor, 1991, BS Cal Tech,PhD MIT (CHEM)

*CAO, YANZHAO, Professor, 2008, PhD Virginia Tech,MS BS Julin (MATH)

CAO, GUANQUN, Assistant Professor, 2012, PhD Michigan State University, MS University of Science and Technology of China, BS Anhua University,China (MATH)

CAPONETTO, ROSETTA, Assistant Professor, 2009, Connecticut,MA Bari,BA Bologna (FLNG)

*CARAVAN, LISA R., Assistant Professor, 2011, BM Temple,MM Eastman School of Music (CTCH)

*CARAVAN, LISA R., Assistant Professor, 2011, DMA MM Eastman School,BM Temple (MUSI)

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The Graduate School

Points of Contact

GEORGE T. FLOWERS, Dean

GEORGE CRANDELL, Associate Dean

The Graduate School is open 7:45-11:45 a.m. and 12:45-4:45 p.m., Monday through Friday.

Telephone: (334) 844-4700. Fax: (334) 844-4348.

E-mail: gradadm@auburn.edu

Web: www.grad.auburn.edu

Mailing Address: 106 Hargis Hall, Auburn, AL 36849-5122.

Admissions

- Admission Requirements
- Application for Admission
- Admission of Transient Graduate Students
- McNair Scholars
- Active Military Personnel

- Correspondence Work Unacceptable
- Student Classifications

Admission Requirements

Departments make admissions decisions based on the compatibility of the applicant's goals with departmental resources, the availability of spaces for new students, and a holistic evaluation of the applicant's potential for success in the program. Other considerations might typically include standardized test scores, grades and/or GPAs, letters of recommendation, writing samples, research or applied experience, and interviews.

To be considered for admission, the applicant must satisfy the following requirements:

1. The applicant must hold a bachelor's degree from an accredited U.S. institution or provide proof of equivalent training from a recognized academic institution outside the United States. Equivalency is determined by international evaluators in the Graduate School.
2. The applicant must be in academic good standing at the institution last attended.
3. The applicant must submit standardized examination scores (GRE, GMAT, TOEFL, and/or IELTS) if required for application to the degree program. Applicants with an earned doctorate (Professional, EdD, PhD) from an accredited institution whose instruction is in English may be exempted from this requirement.
4. The successful applicant normally will meet one of the following: a) a GPA of at least 2.75 on all undergraduate course work at an accredited United States institution in fulfillment of the requirements for a baccalaureate degree; b) a GPA of at least 3.0 on all graduate course work at an accredited United States institution in fulfillment of the requirements for a graduate degree; or c) an acceptable GRE or GMAT score as determined by the program to which the applicant applies.
5. Applicants whose native language is not English must submit either TOEFL scores of at least 550 on the written test (213 on the computer-based test), 79 on the Internet Based Test with at least 16 in each section, or IELTS overall band score of at least 6.5.
6. The applicant must be recommended for admission by the graduate faculty in the applicant's area of study. Departments may (and frequently do) establish higher standards than those described here, and may require that applicants submit additional materials. Applicants should contact the department to which they seek admission for information about additional requirements.

Final evaluation of application files will not occur until all of the above requirements have been met. Applicants will be notified by the dean of the Graduate School when an admissions decision has been made. Some departments, operating with a limited number of spaces for students each year, make final decisions for the fall semester in early spring.

Application for Admission

To apply for graduate study, submit to the Office of Graduate Admissions:

1. A formal application. Applications for admission are submitted online at www.grad.auburn.edu. Domestic applications must be accompanied by a fee of \$60; international applications must be accompanied by a fee of \$70. These fees may be paid online via credit cards or by checks or money orders (made payable to Auburn University).
2. One official transcript of all undergraduate- and graduate-level study from each school previously attended. An applicant who, because of current enrollment, cannot provide final transcripts at the time of application, must submit transcripts of all completed study, as well as incomplete transcripts from the current institution. Applicants do not need to provide transcripts for credits earned at Auburn University.
3. Standardized Graduate Record Examinations (GRE) general test scores are required for admission in all departments except the following: Community Mental Health; Industrial Design; Integrated Design and Construction; Landscape Architecture; Nursing; School Counseling; and Real Estate Development. The Physicians MBA program and the Executive MBA program do not require any standardized test for admission. The following programs require the Graduate Management Admissions Test (GMAT): Accountancy; Aviation and Supply Chain Management; Finance; and MBA. The following programs require the GRE or the GMAT: Hospitality Management and Management (GMAT preferred). The master of business administration program will allow the substitution of the GRE for the GMAT under some circumstances. International applicants must also submit Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) scores. Applications and dates for these

tests may be obtained at many colleges and universities; by writing the Educational Testing Service, P.O. Box 6000, Princeton, NJ 08541-6000; by telephoning (609) 771-7670 for the GRE, (609) 771-7330 for the GMAT, or (609) 771-7100 for the TOEFL; or by accessing the Educational Testing Service website at www.ets.org (<http://www.ets.org>).

4. **Additional Materials.** Academic programs typically require additional materials to evaluate an applicant's potential for graduate study. Prospective students must also contact the department in which they wish to study to obtain information regarding additional admission requirements, such as writing samples and letters of recommendation. With the exception of the application, official transcripts, and standardized test scores, which should be sent to the Graduate School, materials requested by programs should be sent directly to the academic department.

Admission to any graduate degree program is granted by the dean of the Graduate School upon the recommendation of the department of proposed study. Applications and all other relevant material must be received by the Graduate School at least 45 days before the first day of class of the semester in which the student wishes to begin graduate study. International applicants should submit all required materials at least 90 days before the first day of class of the semester in which the student wishes to begin graduate study. Deadlines set by the Graduate School are listed in the front of this *Bulletin*. However, most academic units make admission decisions several months in advance. Thus, applicants should check with the department to which they seek admission to determine when materials should be submitted. Approval is valid for a maximum of 12 months beyond the entrance date given on the application, with the approval of the program admitting the student. If the student does not register during this period, a new request for approval must be submitted. Application materials become the property of Auburn University and may not be returned to the applicant or forwarded to other institutions.

Admission of Transient Graduate Students

A graduate student in good standing in an accredited college or university may be admitted as a transient when faculty and facilities are available. To be eligible, the student must submit a special Graduate Transient Form prior to the beginning of the semester for which transient status is requested. The form, available from the Graduate School or on the Web at www.grad.auburn.edu, must bear the signature of the student's department head and graduate dean or his/her designee. Transient status is granted for one semester only and does not constitute admission or matriculation as a degree candidate.

McNair Scholars

The Graduate School recognizes the achievement of students who have successfully completed a Ronald E. McNair Postbaccalaureate Achievement Program by waiving the Graduate School application fee. A letter confirming participation in the program is required.

Active Military Personnel

The Graduate School recognizes the contributions of students actively serving in the United States military by waiving the Graduate School application fee. A letter confirming active duty status is required.

Correspondence Work Unacceptable

Study by correspondence shall not be counted toward a graduate degree.

Student Classifications

For administrative purposes, Auburn University students are assigned to a class level. Those that apply to graduate students are:

- MST - Students who hold full admission to Master's programs.
- EDS - Students who hold full admission to Specialist in Education programs.
- PHD - Students who hold full admission to Doctor of Philosophy programs.

- GCRT – Students admitted to an approved Graduate Certificate program.
- GND – Students who hold a Bachelor's degree (or post-baccalaureate degree) may apply for admission to the Graduate School as a non-degree student for personal development, to obtain or renew certification, or to take a limited number of courses preliminary to enrolling in a graduate degree program. No more than 12 hours of credit earned while enrolled as a non-degree student may later be counted toward a graduate degree; however, students officially enrolled in an approved graduate certificate program may count up to the maximum number of credit hours allowed by the certificate program toward a graduate degree. Non-degree students who later decide to pursue a graduate degree must re-apply for admission to the Graduate School and the graduate degree program.
- GPR – Students who meet requirements for provisional admission except that they have not taken the GRE or GMAT (if required by the admitting program) or have not submitted all transcripts. This classification is for one semester only, and satisfactory scores and/or all transcripts must be submitted by the end of that semester. This classification cannot be used by international students, who must submit official transcripts and satisfactory scores on all required examinations before they are admitted.

Registration

- Leave of Absence
- Withdrawing from Courses
- Continuous Enrollment Policy
- Exceptions to the Continuous Enrollment Policy
- Inactive Status
- Non-Graduate Students and Graduate Work
- Non-Graduate Students Enrolled in Accelerated Bachelor's/Master's Degree Plans
- Registration and Graduation Requirements
- Transfer of Credit from Other Institutions
- Transfer to a Different Degree Program
- Undergraduate Courses, S/U Option and Auditing Courses

Leave of Absence

A student may be granted a leave of absence for medical reasons, family necessity or dependent care, military service, or other approved personal reasons. Students planning to discontinue enrollment for a semester or more must request approval for a leave of absence. Students may petition the Graduate School for a leave of absence for a maximum of two semesters during the entire program; however, the Graduate School may approve extensions to the maximum two semester leave of absence (e.g., for military service obligations extending beyond two semesters).

A petition for a leave of absence (or extension), signed by the Graduate Program Officer or head of the academic unit, must be approved by the dean of the Graduate School. The Graduate School may request appropriate documentation. The request must be filed and approved before the anticipated absence. An approved leave of absence will enable students to re-enter their program without applying for re-activation or owing retroactive tuition and enrollment fees.

A student on leave is not required to pay fees, but in turn may not use Auburn University faculty, facilities, resources, or services intended only for enrolled students; receive a graduate assistantship, fellowship or financial aid from the University or take any Auburn courses related to the plan of study.

Withdrawing from Courses

Courses may be dropped without academic penalty on or before mid-semester using the Schedule Adjustment form (https://fp.auburn.edu/registrar/forms/schedule_adjustment_form.pdf). A course may be dropped after mid-semester only under unusual conditions. When the Graduate dean approves dropping the course under such circumstances, a W will be assigned only when the instructor indicates that the student is clearly passing the course. Otherwise a grade of WF (Withdrawn Failing) is assigned. A student

dropping the only course or all courses for which the student is registered after the first class day must resign for the semester on a separate form (<https://fp.auburn.edu/registrar/forms/studentResignation.pdf>) obtained from the Graduate School.

Continuous Enrollment Policy

All full- and part-time degree-seeking graduate students must be continuously enrolled. Continuous enrollment is defined as registration for a minimum of one credit hour in at least two semesters in a given academic year (fall, spring, summer) until the degree is awarded or status as a degree-seeking student is terminated through an official university withdrawal.¹ Students must register for the term in which they take their examinations, defend their dissertations, and complete degree requirements (including summer term). Although the Graduate School and individual graduate programs will monitor the enrollment status of graduate students, it is ultimately the responsibility of graduate students to ensure that they are meeting the enrollment provisions of this policy.

* Students who enroll for the first time during spring or summer semesters will not be declared inactive if they register in at least two semesters during their first full and subsequent academic years.

Exceptions to the Continuous Enrollment Policy

The Graduate School, if circumstances warrant, may grant exceptions to the Continuous Enrollment Policy. Appeals should be made directly to the dean of the Graduate School.

Inactive Status

Students who fail to register for at least two semesters in a given academic year will be declared inactive. To be re-activated, students must apply for re-activation to the program in which they were enrolled and the Graduate School. Students must also complete the re-admission form (http://grad.auburn.edu/forms/READMISSION_FORM.pdf). Re-activation is not guaranteed. In order to fulfill the continuous registration requirement, students who are re-activated must register retroactively for a minimum of one credit hour and pay the associated tuition and fees for all semesters that have elapsed since they were last enrolled --- up to a maximum of two semesters per academic year and a total of four semesters.

Non-Graduate Students and Graduate Work

An Auburn University undergraduate student may register for graduate courses provided that the following conditions are met: the student has at least a 3.0 GPA, is within 30 semester hours of graduating, has the written consent of the instructor of each graduate course, and obtains approval in advance from the Graduate School. A maximum of 12 semester hours of graduate course work taken in this option later may be applied toward a graduate degree at Auburn University with the approval of the student's advisory committee provided that appropriate arrangements are made in advance with the Graduate School and a grade of B or higher is achieved on all courses used for graduate credit. The total course load taken at the time the undergraduate student is in a graduate course may not exceed 16 semester hours per semester. The same guidelines apply to undergraduate students taking graduate courses for undergraduate credit. A student may not use the same graduate course for both undergraduate and graduate credit. An exception is made for non-graduate students officially enrolled in an approved Accelerated Bachelor's/Master's Degree Plan (see Non-Graduate Students Enrolled in Accelerated Bachelor's/Master's Degree Plans below).

Any post-baccalaureate, non-degree student desiring enrollment in a graduate course must receive written consent of the instructor and approval of the Graduate dean in order to register for such a class.

Non-Graduate Students Enrolled in Accelerated Bachelor's/Master's Degree Plans

An Auburn University undergraduate student officially admitted and enrolled in an approved Accelerated Bachelor's/Master's degree plan (ABM) may register for graduate courses that are listed as required or elective courses in the student's ABM plan. A maximum of nine hours (in a 30-hour master's program) or 12 hours (in a 36-hour or more master's program) may be counted towards *both* degrees, provided that a grade of B or higher is achieved on all courses used for graduate credit. No courses may be counted for both

undergraduate and graduate credit in a program in which the double counting of courses is prohibited by an accrediting agency. The total course load taken at the time the undergraduate student is in a graduate course may not exceed 16 semester hours per semester.

Registration and Graduation Requirements

Thesis and dissertation students needing thesis or dissertation final approval and submission and the final examination, or non-thesis graduate students needing to complete projects, would register for 7990 Research and Thesis, 8990 Research and Dissertation, or 7980 Project, as applicable. Non-thesis graduate students requiring only a final examination would register for GRAD 7000. Students may not register for GRAD 7000 for more than one semester.

No student will be permitted to graduate who fails to submit a graduation check request to the Graduate School prior to the semester of expected graduation. Graduation day is the official last day of each semester and, therefore, is the deadline for approved plans of study and graduation checks for graduation the following semester. It is the responsibility of graduate students to check records for compliance with graduation requirements. Students who have completed a graduation check for a previous term must notify the Graduate School of pending graduation before the 15th class day of each subsequent semester. Graduate degrees are awarded at the end of each semester. Candidates wishing to graduate in absentia must inform the Registrar's Office.

A graduate student may carry a maximum course load of 16 hours per semester (14 in the summer term) including undergraduate courses. Graduate students must carry nine hours per semester or enroll in (7@@0/8@@0) with concurrent enrollment for a minimum of one hour of 7990/8990 to be classified as full-time students. Enrollment in (GRAD 7@@0/8@@0) requires the completion of the form (https://fp.auburn.edu/gradschl/public_html/forms/registration.asp) available at the Graduate School or at www.grad.auburn.edu.

Transfer of Credit from Other Institutions

Graduate credit taken in residence at an international institution or at a regionally accredited U.S. institution may be transferred when recommended by the student's major professor, advisory committee, graduate coordinator, and when also approved by the dean of the Graduate School. Such transfer credit must fall within the time limits of the degree. Students seeking transfer credit must provide documentary evidence showing that the course is comparable to similar graduate courses at Auburn University and relevant to the student's plan of study. Students must also provide an official transcript showing credit earned for the course. No prior commitment is made concerning whether transfer credit will be accepted. A student must earn at least 24 semester hours, or half of the total hours required for a master's degree, whichever is greater, at Auburn University. A program that requires 30 hours of credit will be limited to 6 semester hours of transfer credit. The total number of credit hours that may be transferred from another accredited institution towards a doctoral degree varies by program but must be less than 50% of the credit hours listed on the Plan of Study. Such transfer credit 1) must fall within the time limits of the degree; and 2) must be approved by the advisory committee and the dean of the Graduate School. In the case of graduate degree programs offered through joint, cooperative, or consortial agreements, the student must earn a majority of credits from the participating institutions. No transfer credit will be approved without an official transcript. No course on which a grade lower than B was earned may be transferred. Additionally, credit will not be allowed if the combined GPA on graduate work taken at other schools is less than 3.0 on a 4.0 scale, nor may transfer credit be used to improve the GPA on courses taken at Auburn University.

Transfer to a Different Degree Program

For a student to transfer from one department to another requires **that the student be in good academic standing**, a new application for admission and the usual application fee. Changes in application status (master's to doctoral, doctoral to master's) or enrollment status (master's to doctoral or doctoral to master's) must be requested by the applicant/student involved and endorsed by the department head or chair, major professor, and advisory committee for enrolled students and approved by the dean of the Graduate School. Current international students must recertify full financial sponsorship for the issuance of a new 1-20 form.

Undergraduate Courses, S/U Option and Auditing Courses

A graduate student may register for undergraduate courses (1000-4000-level). For students enrolled in Graduate School, grades earned in undergraduate courses will not be used in calculation of the GPA for either retention or graduation, but will appear on the graduate transcript. This policy took effect with the posting of grades fall 1998. For courses taken before fall 1998, grades earned in undergraduate courses may be used in calculation of the GPA for retention, but not for graduation. A graduate student may elect any course to be graded under the Satisfactory (S)-Unsatisfactory (U) option, if the major professor so recommends. Students are not allowed to select this option after the 15th class day. Courses listed on the Plan of Study must be graded A, B, C, D or F except for those designated as S/U. Similarly a graduate student may elect to audit any course not on the Plan of Study. The student may not change from audit to credit after classes begin, but may change from credit to audit before the 15th class day. All uses of the S/U and audit option require approval of the Graduate School.

Academic Progress

- Incomplete Grades
- Grades
- Academic Standing
- Advisors
- Academic and Professional Progress

Incomplete Grades

A grade of “incomplete” must be removed within the following six months or it will be recorded permanently as an F and the course will have to be repeated. This applies regardless of the student’s enrollment status. A student not enrolled during the following six months is not exempt from this rule. No student may graduate until “incomplete” and “no record” grades are removed, and the removal must be completed at least three weeks before the date of graduation, regardless of whether the course is included on the Plan of Study.

Grades

To receive a graduate degree at Auburn University, a student must earn a cumulative GPA of 3.0 on a 4.0 scale on all courses carrying graduate credit. No more than nine hours beyond the student’s Plan of Study is allowed in obtaining the cumulative graduate GPA (CGGPA). No grade below C (including unsatisfactory grades for courses taken under the S/U option) is acceptable for credit toward a graduate degree. Each graduate course in which a grade below C is received must be repeated at Auburn University whether or not it is listed on the student’s Plan of Study. Both the original grade and the grade for the repeated course will be counted in calculating the CGGPA. Course credits transferred from another institution may not be used to satisfy this requirement. Courses retaken will not count against the nine-hour limit beyond the student’s Plan of Study in obtaining the minimum CGGPA.

Academic Standing

Only grades in Auburn University courses approved for graduate credit will be used in determining the overall GPA for continuation in the Graduate School. If at the end of any semester the cumulative graduate GPA (CGGPA) falls below 3.0, the student will be placed on **academic probation**. If the CGGPA remains below 3.0 after the next eleven credit hours of graduate enrollment (both graded and ungraded) or two consecutive terms [excluding the summer term] (whichever comes first), the student will be placed on **academic suspension**. Students on academic suspension may not hold a graduate assistantship. The student may be readmitted only after completion of a remediation plan recommended by the academic unit and approved by the dean of the Graduate School. Course work taken as part of the remediation plan must be completed within two consecutive semesters (excluding the summer term) and may count toward both the student’s degree and CGGPA with the recommendation of the department head and the approval of the graduate dean. Upon completion of the remediation plan, the student must have addressed academic deficiencies and have a CGGPA of 3.0 or above.

Once approved by the graduate dean, remediation plans may not be amended or extended beyond the original deadline. If a student fails to complete the remediation plan as approved or if the student earns a grade of C or below while completing the remediation plan, the student will be dismissed from the Graduate School and the designation ACADEMIC DISMISSAL will be placed on the student's official record.

Advisors

The dean of the Graduate School is the general counselor to all graduate students. A faculty advisor or major professor will be designated for each student in accordance with departmental policy. There also will be an advisory committee for each student. The major professor generally serves as the chair of the advisory committee. In the case of co-chairs, at least one must be a member of the graduate faculty at the appropriate level at Auburn University. Some required forms and reports regarding the student's program must be approved by the major professor, advisory committee, department head or chair and the dean of the Graduate School. Students should ascertain which signatures must be obtained.

Academic and Professional Progress

Each student's progress toward degree completion will be monitored by the student's advisory committee. Failure to maintain academic standards may result in probation, suspension, or dismissal from the Graduate School. In addition to academic standards, the advisory committee may take into consideration issues of professional development. Failure to make progress professionally may result in probation or dismissal from the Graduate School. In such cases, the advisory committee will develop a remediation plan, detailing the deficiencies and/or grievances that must be addressed within a probationary period limited to the next two semesters (excluding the summer term) or the next eleven credit hours of graduate enrollment (whichever comes first). The remediation plan, which should have the unanimous support of the advisory committee, will be discussed in a meeting with the student. Copies of the remediation plan and a summary of the meeting will be provided to the student, the department head/chair, the academic dean, and the Dean of the Graduate School. Failure to satisfy the terms of the remediation plan within the time specified by the advisory committee will result in dismissal from the Graduate School. Any student dismissed from the Graduate School for failure to make satisfactory progress must appeal to their academic dean for readmission, and must subsequently receive approval from the Dean of the Graduate School.

Graduate Assistantships & Fellowships

- Tuition Waiver
- Graduate Assistantships
- Background Check Policy
- Graduate Fellowships
- Multiple Graduate Assistantship Policy

Tuition Waiver

Non-Alabama resident graduate assistants may receive a waiver of the out-of-state portion of their tuition if they are on at least a 25 percent graduate assistantship (new appointments beginning in Fall 2013 must be at 33 percent) and are paid a minimum monthly stipend set each year by the provost. Such graduate assistants who have been on assistantship for consecutive fall and spring semesters are eligible to have the out-of-state portion of their tuition waived for the summer semester whether or not they are on assistantship that semester. Students will need to contact the Graduate School to have this waiver applied.

Graduate Assistantships

Graduate assistant appointments are temporary. Continuation depends upon availability of funds, level of enrollment, and research needs. Salaries are paid in accordance with the budget policies and payroll procedures of the university. The Board of Trustees is

obligated to pay certain fixed charges against the institution and thereafter pay salaries in full insofar as funds are available. If for any reason beyond the control of the Board of Trustees funds are not available, salaries will be prorated.

Each graduate assistant must be in a degree-seeking program and registered in the classification of MST, EDS, PHD, or GPR. The student also must be registered for at least one course (during each academic term of the assistantship), must satisfy the minimum course load specifications of the individual departments and must be making satisfactory progress toward the degree.

Workloads for graduate assistants are defined on the basis of a normal teaching load or the equivalent time in other duties as determined by each department head and the dean of the school or college in which the assistant is employed. For example, a one-third workload is one-third of a normal teaching load. Graduate students may hold multiple assistantships and the assistantships may come from different units on campus, but together they cannot add up to more than a 100 percent appointment. Maximum course loads for graduate assistants are determined by individual departments. It is recommended that graduate students working more than half-time not carry a full academic load.

Requirements that graduate students register for hours not included in the plan of study as a condition of employment or to enhance credit hour production for administrative purposes are inappropriate. Similarly, requiring hours on the plan of study beyond the degree requirements established by the Graduate Faculty for such administrative purposes is also inappropriate unless the additional requirements are required by university policy.

International graduate students on F1 visas cannot hold a greater than 50 percent work appointment. International graduate students on F2 visas cannot hold a work appointment. Multiple assistantships for international graduate students cannot add up to more than a 50 percent work appointment.

International graduate teaching assistants who are assigned to scheduled lecture or laboratory sections must first be certified in spoken English proficiency. Certification may be attained through a minimum score of 50 on the Test of Spoken English (TSE) or a 23 on the speaking section of the Internet Based TOEFL offered by the Educational Testing Service or approval by the director of the English as a Second Language Program (ESL). Applicants who hold a baccalaureate degree from an accredited institution whose instruction is in English may be exempted from this requirement.

Background Check Policy

The Graduate School requires that all graduate student employees (including hourly paid) have an approved consumer report and/or investigative consumer report (background check) as a condition for appointment. The information contained in these reports may be used to deny an individual employment or continued employment with Auburn University. The background report and its contents are deemed private and confidential and shall be disclosed only for the purposes described in "Procedures for Securing Background Reports for Graduate Students Before Hiring" (http://grad.auburn.edu/cs/background_procedure.pdf) to those University employees who have a need to know, or as otherwise required or permitted by law. This policy is effective for all graduate student employees whose new appointments begin on or after January 1, 2014.

Graduate Fellowships

Auburn University provides in-state tuition fellowships to most of its students holding graduate assistantships. Though administered through the Graduate School, applicants should contact the specific academic departments concerning eligibility and availability.

Multiple Graduate Assistantship Policy

Graduate students may hold assistantships and the assistantships may come from different units on campus, but together they cannot add up to more than a 100 percent appointment. Multiple assistantships for international graduate students cannot add up to more than a 50 percent work appointment. Approvals from both the home department and the hiring department are required for such multiple appointments. A memo indicating such approvals should be submitted to the Graduate School prior to the beginning of the appointment.

Doctoral Degrees

- Admission
- Summary of Procedures for Doctoral Degree Programs
- Advisory Committee and Plan of Study
- Course Requirements
- Time Limit
- Dissertation
- The Doctor of Philosophy Degree
- Final Examination
- Language Requirement
- Residency Requirement

The doctor of philosophy is offered in aerospace engineering, animal sciences, biological sciences (botany, microbiology and zoology), chemical engineering, chemistry, civil engineering, computer science and software engineering, counselor education, counseling psychology, curriculum and teaching, discrete and statistical sciences, early childhood, educational psychology, electrical and computer engineering, English, fisheries and allied aquacultures, forestry and wildlife sciences, history, horticulture, human development and family studies, industrial and systems engineering, kinesiology, management, materials engineering, mathematics, mechanical engineering, nutrition and food science, physics, plant sciences (agronomy and soils, plant pathology, and entomology), poultry science, psychology, public administration and public policy, and rehabilitation, special education, plus interdepartmental programs in biomedical sciences (anatomy, physiology, and pharmacology; large animal surgery and medicine; pathobiology; radiology; and small animal surgery and medicine), economics (agricultural economics and forestry), integrated textile and apparel science (consumer affairs and polymer and fiber engineering), and pharmaceutical sciences (pharmacal sciences and pharmacy care systems).

Admission

Prospective candidates for the degree of doctor of philosophy are admitted under the same procedures and requirements outlined in the general regulations elsewhere in this *Bulletin*. A student must be admitted to a specific doctoral program, but admission does not mean admission to candidacy for the degree, which occurs only after satisfactory completion of the general oral examination.

Summary of Procedures for Doctoral Degree Programs

The student should:

1. Obtain application forms from the Graduate School and apply by submitting all required materials to the Graduate School by the deadlines published in this Bulletin. The Graduate School forwards the application to the appropriate departmental screening committee. The department head or chair then makes a recommendation to the dean of the Graduate School, who sends a letter notifying the applicant of the decision.
2. Apply for an assistantship, if applicable, through the department involved.
3. Become familiar with the requirements for the doctoral degree as published in this Bulletin.
4. Consult with the departmental advisor and become familiar with departmental procedures.
5. Plan a schedule of study for the first semester with advisor.
6. Submit a proposed schedule for fulfilling the residency requirements.
7. Acquire necessary forms at the Graduate School or on the Web at www.grad.auburn.edu.
8. Establish an advisory committee through the major professor and department head or chair. Official appointment of the advisory committee occurs when the Plan of Study is approved by the Graduate School.
9. Prepare a Plan of Study approved by the advisory committee and department head or chair and submit to the Graduate School.
10. Complete course work, including language requirements, if any, as detailed in the Plan of Study.
11. Arrange for the general written and oral examinations through the advisory committee. After the written examination, schedule the general oral examination at least one week in advance using a form obtained from the Graduate School.

12. Submit the dissertation proposal for approval by the advisory committee and become familiar with Electronic Thesis and Dissertation Guide, available at www.grad.auburn.edu/etd_guide.html.
13. Request graduation check in the Graduate School no later than the last day of the semester (graduation day) prior to the semester of graduation.
14. Register for at least one course the semester of graduation.
15. Prepare dissertation and submit a committee-approved first draft to the Graduate School for review and approval by the University Reader, who serves as the representative of the graduate faculty.
16. Study recommendations of the University Reader and make appropriate changes in the dissertation.
17. On approval of the dissertation by the dean of the Graduate School, arrange for final oral examination.
18. File an Academic Residency form.

Advisory Committee and Plan of Study

After the student has enrolled in the doctoral program, an advisory committee should be selected by the student, major professor and department/program head or chair. The advisory committee is responsible for developing the student's Plan of Study and conducting the doctoral general and final examinations. It should consist of at least four members of the Graduate Faculty. Additional voting members may be appointed to the committee (including no more than one non-Auburn University faculty member, who must hold the terminal degree in the field). A majority of the Auburn University affiliated committee members, including the major professor, must be members of the Graduate faculty at Level 2. The major professor must also be a graduate faculty member in the department/program granting the degree. The formal appointment of the advisory committee occurs when the Plan of Study is approved by the Graduate School.

The Plan of Study should be prepared by the student and the advisory committee and filed with the Graduate School at least one term prior to the term in which the student plans to graduate. The Graduate School recognizes that changes may be warranted, and a form is available for amendments as required by student needs, research interests and course availability.

Course Requirements

The minimum number of hours in a doctoral program is 60 semester hours earned through instruction beyond the bachelor's degree, including 1) a minimum of 30 semester hours graded (e.g. A, B) graduate course work (6000-level and above); and 2) a minimum of 30 semester hours of additional graduate course work (6000-level and above) that may include ungraded courses, 7990 and 8990 and must include at least 10 hours of 8990. Some departments require more than 60 semester hours, and requirements may vary according to a student's background and interest.

The total number of credit hours that may be transferred from another accredited institution toward a doctoral degree varies by program but must be less than 50 percent of the credit hours listed on the Plan of Study. Such transfer credit 1) must fall within the time limits of the degree; and 2) must be approved by the advisory committee and the dean of the Graduate School. A maximum of four hours of 7990 (Research and Thesis) from a completed master's program may be counted.

All doctoral students must complete a minimum of 10 hours of 8990. Enrollment in 8990 may take place at any time the student and the advisory committee deem appropriate. During any one semester, the number of hours of 8990 in which the student enrolls should reflect the amount of instructional time being spent on the dissertation and the degree to which university resources are being utilized. Students may enroll, during any one semester, for as few as one hour or as many as 16 hours of 8990. Dissertation students submitting their dissertation, awaiting committee review and approval, or taking their final examination must register for 8990 Research and Dissertation in the semester(s) when these steps in the process take place. The requisite 10 hours of 8990 should be included in the Plan of Study. No grade is assigned.

The dean of the Graduate School is authorized to approve alternatives to these course work requirements in exceptional cases and on an individual basis.

Time Limit

Programs and departments should conduct annual reviews of doctoral candidates to assess progress toward the completion of the degree. Students are expected to achieve candidacy within six years and to complete all requirements for the degree within ten years. Upon admission to candidacy, the student has four calendar years to complete all remaining requirements for the doctoral degree. The student's time to completion begins with the earliest completed course approved for inclusion in the plan of study. If unable for any reason to complete the requirements on time, the student may petition, with the approval of the advisory committee, the dean of the Graduate School for a one year extension. Students failing to complete the degree in the allotted time revert to the status of an applicant and must petition, with the approval of the advisory committee, the dean of the Graduate School to retake the oral examination.

Dissertation

A dissertation is required of all candidates for the degree of doctor of philosophy. It shall constitute an original contribution to knowledge. The student conducts the research and prepares the dissertation under the direction of the major professor. Only dissertations prepared according to *Electronic Thesis and Dissertation Guide*, available on the Web at www.grad.auburn.edu/etd_guide.html, are accepted by the Graduate School. Submission of a dissertation is defined as the time at which the first complete draft of such is submitted to the major professor for review. All dissertations must be published by ProQuest/UMI. The student is required to pay for this service. Auburn University reserves the right to make copies of the dissertation, but the student retains all publication rights. Effective summer 2005, all dissertations must be published electronically through AUETD.

The Doctor of Philosophy Degree

The doctor of philosophy is conferred in recognition of the mastery of a special field of learning as shown by the satisfactory completion of a prescribed course of study and investigation, the successful passing of general examinations covering the major and minor fields, the preparation of an acceptable dissertation reflecting high achievement in scholarship and independent original investigation, and the passing of a final examination on the dissertation and related subjects. The degree is a research degree. It is not conferred merely upon fulfillment of technical requirements, but awarded in recognition of the ability to think and work independently, originally, and creatively in a chosen field. Some departments have special requirements for the degree, and the student will be governed by those, including the ones listed in departmental statements under Courses of Instruction elsewhere in this publication.

General Doctoral Examination

A general examination, often called the "preliminary examination," is required of all applicants for the degree of doctor of philosophy. It consists of written and oral testing by the student's advisory committee (or by an examination committee designated by the student's academic program) in the student's major and minor. The written portion of the examination does not require approval in advance by the Graduate School. The oral portion, however, does require such approval. Arrangements for the oral examination must be made by application to the Graduate School at least one week in advance of the examination. The primary purpose of the general examination is to assess the student's understanding of the broad body of knowledge in a field of study. The examination also affords the advisory committee an opportunity to review the student's proposed research and understanding of research methods and literature in the chosen field. If the general examination reveals deficiencies in any of these areas, the advisory committee may recommend remedial work, re-examination, or discontinuation of doctoral study.

The general oral examination should be conducted immediately after the successful completion of the written examination and well before the final examination. At least one complete semester (preferably more than one) must intervene between the general oral and final examinations. The two examinations thus cannot be taken either in the same semester or in consecutive semesters. Some departments have specific requirements for conducting these examinations, and the student should become familiar with these. Successful completion of the oral examination requires unanimous support of the student's advisory committee. If the general oral examination is failed, a re-examination may be given on recommendation of the committee and approval by the dean of the Graduate School. Further examinations require exceptional circumstances and approval by the Graduate Council.

The student becomes a candidate for the degree on successful completion of the general examination.

Final Examination

After the dissertation has been completed (except for minor revisions) and has been approved by the student's advisory committee, it is submitted to the Graduate School. A University Reader (a member of the Auburn University graduate faculty [Level 1 or 2] who serves to represent the university's graduate faculty and the Graduate School) will be appointed to review the dissertation. However, the student's advisor may request appointment of the University Reader at any time rather than waiting until after the dissertation is drafted. When the Graduate School has received an approved evaluation from the University Reader, the student may apply for the final examination on a form sent by the Graduate School. The application must be filed with the Graduate School at least one week in advance of the final examination. The examination is administered by the student's advisory committee. The University Reader also attends and participates. The examination, which generally is oral but may be both oral and written, includes the major and minor fields and a defense of the dissertation. Successful completion requires unanimous support of all members of the committee, including the University Reader. Any member of the Graduate Faculty may attend.

If a student fails the examination, a re-examination may be given on recommendation of the advisory committee and approval by the dean of the Graduate School. Further examination requires exceptional circumstances and approval of the Graduate Council. In addition to successful completion of all examinations, the final electronic copy of the dissertation must be submitted to the Graduate School before the degree is conferred (see Graduate School calendar for the deadline).

Language Requirement

Language requirements for graduate degrees vary with departments. The Department of Foreign Languages offers proficiency courses in a number of languages. The department also offers reading proficiency examinations for those students who wish to demonstrate proficiency without taking a course. Such students must apply to the Graduate School for these examinations by the deadline listed in the Graduate School calendar at the beginning of this *Bulletin*.

Residency Requirement

Resident, on-campus study is the foundation for research-based graduate degree programs at Auburn University. Any graduate student enrolled in a degree program culminating in a thesis or dissertation must directly engage in research with the major professor, must have access to the research tools needed for the research activity, must be immersed in the culture of graduate education, must engage in the professional activities of the discipline, and must complete the research activity in a reasonable period of time. Graduation requires the major professor to certify compliance with these requirements.

The Master's Degree Program

- Summary of Procedures for Master's Degree Program
- Advisory Committee
- Plan of Study
- Time Limit
- Language Requirement
- Master's Degree Options
- The Thesis Option
- The Non-Thesis Option
- The Master of Arts
- The Master of Science

- Second Master's Degree
- Special or Professional Master's Degrees

The minimum requirements for most master's degrees can be satisfied in one academic year of two semesters or nine months. In practice, however, many students need three semesters or longer. Certain departments have special requirements as outlined in this *Bulletin*. In addition, those students who hold assistantships or fellowships, those who engage in time-consuming work off-campus, or those with scholastic deficiencies of any sort cannot meet all requirements in the minimum time. Also, research is unpredictable and frequently requires more time than anticipated. Certain departments offer a master's degree under two plans, referred to as the Thesis Option and the Non-Thesis Option.

Summary of Procedures for Master's Degree Program

The student should:

1. Obtain application forms from the Graduate School and apply for admission by submitting completed forms and other required materials as outlined in this *Bulletin*.
2. Apply for an assistantship, if pertinent, with the department involved.
3. Become familiar with requirements for the desired degree as outlined in this *Bulletin*.
4. Consult with departmental advisor and become oriented to departmental procedures.
5. Plan schedule of study for the first semester with advisor.
6. Establish an advisory committee through the department head or chair and departmental advisor; usually done during the first semester of course work.
7. Prepare a proposed Plan of Study in consultation with the advisory committee. Submit a plan approved by the committee and department head to the Graduate School at least one term prior to the term in which the student plans to graduate.
8. Consult with the advisor on approval for the thesis plan, if pertinent, and become familiar with the *Electronic Thesis and Dissertation Guide*, on the Web (www.grad.auburn.edu/etd_guide.html).
9. Fulfill language requirements, if any.
10. Request graduation check in the Graduate School no later than the last day of the semester (graduation day) prior to the semester of graduation.
11. Register for at least one course the semester of graduation.
12. Prepare thesis manuscript, if pertinent.
13. Arrange for final oral examination with advisory committee.

Advisory Committee

The student works under the direction of an advisory committee composed of three members recommended by the appropriate department/program head or chair. Two must be members of the graduate faculty. The committee chair (or one of the co-chairs) must be a graduate faculty member in the department/program granting the degree. This committee will approve the student's program of study, conduct required examinations and direct the required field project or thesis. Students in a teaching field (e.g., music education, science education, foreign language education) work under a committee composed of at least two members from the College of Education and one member from a related academic field.

Plan of Study

Early in the graduate program, each student should confer with the appropriate departmental advisor or major professor to select courses and discuss research interests. Then a Plan of Study should be prepared and submitted to the Graduate School. The Plan of Study form is available on the Web at www.grad.auburn.edu. The Plan of Study must be submitted at least one term prior to the term in which the student plans to graduate. No student will be permitted to graduate who fails to submit a Plan of Study. Notification of all changes must be provided before the beginning of the final semester. One to three changes may be made by using the simplified

"Change in Existing Plan of Study Form" available at the Graduate School or on the Web. Four or more changes require a new Plan of Study. The student is responsible for carrying out the planned program and for asking the major professor to make necessary changes.

Time Limit

All graduate work toward a master's degree must be completed within a period of six calendar years. The student's time to completion begins with the earliest completed course approved for inclusion in the Plan of Study.

Language Requirement

Some departments require a reading knowledge of one foreign language. These requirements are outlined in the departmental statements later in this section. Arrangements to take the foreign language examination should be made with the student's major professor and the head or chair of the department. The student must apply at the Graduate School by the deadline for each semester listed in the calendar.

Master's Degree Options

The following general regulations are minimum requirements. The professor or committee in charge of a student's work may require more than the specified minimum in order to achieve a well-rounded program. All programs require a minimum of 30 semester hours of graduate courses, 6000-level or above.

The Thesis Option

The master of arts, master of science and master of industrial design are offered under the thesis option. Thesis students register for 7990 Research and Thesis in semesters when working on the thesis, when submitting, defending or awaiting final approval of the thesis, and when taking final examinations.

Major and minor subjects

A student under the thesis option must earn a minimum of 30 semester hours, of which at least 21 semester hours must be in a major area of concentration. Depending on departmental requirements or the wishes of the student's advisory committee, the remainder of the course work may be taken within the major field or in a separate but closely related area. Specific requirements are set forth in this *Bulletin*.

If a student has not met all undergraduate pre-requisites in any field chosen for major or minor work, these should be scheduled as soon as possible, preferably before graduate work begins. The major professor will indicate these on the student's Plan of Study.

The topic selected for the thesis must be approved by the student's major professor and advisory committee. The student conducts the research and prepares the thesis under the direction of the major professor. The course, Research and Thesis, is number 7990 in all departments. The student must register for a minimum of four credit hours of this course but may register for as many hours as desired. No more than six hours may be counted toward meeting degree requirements. The student may register for one or more hours at a time. No grade is assigned for this course.

The Electronic Thesis and Dissertation Guide, which contains information about requirements for the thesis, is available on the Web at www.grad.auburn.edu/etd_guide.html. Submission of a thesis is defined as the time at which the first complete draft of such is submitted to the major professor for review. The Graduate School accepts only theses prepared according to the Guide. Refer to the Approval Process section in the Guide to have a final format check done. The Graduate School Calendar lists the deadline for acceptance of final approved theses by the Graduate School each semester. If the electronic thesis needs corrections, the student's graduation may be delayed at least one semester. Auburn University reserves the right to make copies of the thesis, but the student retains all publication rights. Effective Summer 2005, all theses must be published electronically through AUETD.

At the discretion of the program, students may be required to pass a comprehensive examination independent of the required thesis defense. If a program requires a comprehensive examination, the program will publish and submit to the Graduate School a

description of the scope and form of the assessment (e.g., comprehensive oral or written examination) and the process for appeal or re-examination should the student fail the examination.

The major professor will schedule the thesis defense not later than the deadline indicated in the Graduate School calendar. The thesis defense should be open to members of the Graduate Faculty as visitors. Successful completion of the thesis defense requires the unanimous support of all members of the advisory committee. If a student fails the thesis defense, one re-examination may be given on recommendation of the advisory committee and approval by the dean of the Graduate School. Further examinations will be allowed only under exceptional circumstances and with approval of the Graduate Council.

The Non-Thesis Option

At the discretion of the program, students may be required to pass a comprehensive examination. If a program requires a comprehensive examination, the program will publish and submit to the Graduate School a description of the scope and form of the assessment (e.g., comprehensive oral or written examination) and the process for appeal or re-examination should the student fail the examination. Non-thesis graduate students who complete a special project must register for 7980 in semesters when working on the project. Non-thesis students requiring only a final examination register for GRAD 7000 in the semester when the exam is taken. Credit hours for 7990 Research and Thesis cannot be counted toward graduation requirements for non-thesis degree programs.

The Master of Arts

The master of arts is offered in communication (thesis and non-thesis option), English (thesis and non-thesis option), history (thesis and non-thesis option), sociology (thesis and non-thesis option) and Spanish.

The Master of Science

The master of science is offered in aerospace engineering, agricultural economics, animal sciences, biological sciences (botany, microbiology and zoology), biomedical sciences (thesis and non-thesis), chemical engineering, chemistry, civil engineering, communication disorders, community mental health, computer science and software engineering, consumer affairs (thesis and non-thesis option), curriculum and teaching, discrete and statistical sciences, early childhood, economics (thesis and non-thesis option), educational foundations leadership and technology, electrical and computer engineering, finance (thesis and non-thesis option), fisheries and allied aquacultures, forestry and wildlife sciences, geology (thesis and non-thesis option), health and human performance, horticulture, human development and family studies, industrial and systems engineering, management (thesis and non-thesis option), materials engineering, mathematics, mechanical engineering, nutrition and food science (thesis and non-thesis option), pharmacal sciences, pharmacy care systems, physics (thesis and non-thesis option), plant sciences (agronomy and soils, entomology, and plant pathology), polymer and fiber engineering (thesis and non-thesis option), poultry science, rehabilitation, special education, and sociology (thesis and non-thesis option).

Second Master's Degree

For a second master's degree, the student fulfills all major requirements applicable to any other master's degree, including the thesis, if appropriate. The student may, on recommendation of the advisory committee, transfer credit hours from the previous master's degree. The student must earn at least 24 semester hours, or half of the total hours required for the master's degree, whichever is greater, in the second master's program at Auburn University.

Special or Professional Master's Degrees

These special or professional degrees are offered: master of accountancy, master of aerospace engineering, master of agriculture (agricultural economics, agronomy and soils, animal sciences, entomology, horticulture, plant pathology, and poultry science), master of applied mathematics, master of aquaculture, master of building construction, master of business administration, master

of chemical engineering, master of civil engineering, master of communication disorders, master of community planning, master of design build, master of software engineering, master of education (curriculum and teaching, educational foundations leadership and technology, health and human performance, and special education, rehabilitation, and counseling school psychology), master of electrical engineering, master of forestry, master of Hispanic studies, master of industrial design (thesis and non-thesis option), master of industrial and systems engineering, master of landscape architecture, master of management information systems, master of materials engineering, master of mechanical engineering, master of probability and statistics, master of public administration, master of technical and professional communication, and master of biological studies.

The Specialist in Education Degree

- Admission
- Advisory Committee
- Requirements for Degree
- Time Limit

This degree is designed for professionals in education and human services areas who want increased competence in a field of specialization. Areas of specialization are offered in the various departments in the College of Education.

Admission

Scholarship, interpersonal orientation and potential for leadership are considered in the screening procedure. Appropriate experience in teaching or a leadership position in education or a human services area is requisite. All work beyond the baccalaureate must have been of high quality with a GPA of at least 3.0 on a 4.0 scale.

Advisory Committee

The specialist student works under the direction of an advisory committee composed of three members recommended by the appropriate department/program head or chair. All must be members of the Graduate Faculty. The committee chair (or one of the co-chairs) must be a graduate faculty member in the department/program granting the degree. This committee will approve the student's program of study, conduct required examinations and direct the required field project. Students in a teaching field (e.g., music education, science education, foreign language education) work under a committee composed of two members from the College of Education and one member from a related academic field.

Requirements for Degree

A minimum of 30 semester hours beyond the master's degree must be taken in a program approved by the student's advisory committee. The Plan of Study should be submitted to the Graduate School at least one term before the term in which the student plans to graduate. Professional educators pursuing sixth-year certification are responsible for adapting their Plans of Study to requirements in the states in which they will need advanced certification. A relevant field project, approved in advance by the student's committee, must be completed under the supervision of the major professor. A final written report on the field project will be submitted to the advisory committee by the student. The advisory committee will conduct a final examination on the area of specialization and the field project.

No student will be permitted to graduate who fails to submit a Plan of Study and graduation check to the Graduate School prior to the semester of expected graduation. Graduation day is the official last day of each semester and, therefore, is the deadline for submitting Plans of Study for graduation the following semester.

Time Limit

All graduate work toward an Education Specialist degree must be completed within a period of six calendar years. The student's time to completion begins with the earliest completed course approved for inclusion in the plan of study.

General Policies

- Points of Contact
- Calendar
- Graduate Study and University Employees
- Classified or Proprietary Research
- Research Involving Humans
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- Academic Engagement
- Academic Integrity and Student Conduct
- AUETD Publication and Access Policy
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- Two-Campus Studies

Points of Contact

GEORGE T. FLOWERS, Dean

GEORGE CRANDELL, Associate Dean

The Graduate School is open 7:45-11:45 a.m. and 12:45-4:45 p.m., Monday through Friday.

Telephone: (334) 844-4700. Fax: (334) 844-4348.

E-mail: gradadm@auburn.edu

Web: www.grad.auburn.edu

Mailing Address: 106 Hargis Hall, Auburn, AL 36849-5122.

Calendar

The university operates on the semester system. The Graduate School calendar at the beginning of this *Bulletin* is also available at the Graduate School and contains the dates of various important deadlines. It should be followed carefully.

Graduate Study and University Employees

An Auburn University faculty member or employee may pursue a graduate degree with the approval of the head or chair of the employing department and the dean of the employing school or college. Inquiries should be made to the dean of the Graduate School.

Classified or Proprietary Research

No thesis or dissertation should be based exclusively on a proprietary or classified research project, nor should a thesis or dissertation include proprietary or classified information. Any graduate student and advisor engaged in such research should identify an alternative topic for the thesis or dissertation. Should a thesis or dissertation include such information, the document must be rewritten with offending material excised.

Research Involving Humans

Auburn University established the Institutional Review Board for the Use of Human Subjects in Research (IRB) to evaluate research for compliance with the guidelines and policies of the U.S. Department of Health and Human Services, the Public Health Service, the Food and Drug Administration and other federal, state and local regulations. All research using human subjects – whether it is conducted by faculty, staff or students – must be approved in advance by the IRB, regardless of the source of funding, lack of funding or any other consideration. Research involving human subjects not approved in advance may be disallowed and may incur severe penalties for non-compliance with institutional policy. Information and review forms may be obtained from the Administrator for Special Programs, 307D Samford Hall, (334) 844-5966.

Activities Involving Animals

Auburn University's Animal Resources Program requires compliance with the Animal Welfare Assurance negotiated with the Office of Protection from Research Risks/National Institutes of Health (OPRR/NIH). A major part of that Assurance involves the Institutional Animal Care and Use Committee (IACUC) that ensures compliance with the Assurance, the policies of the U.S. Department of Health and Human Services, the U.S. Department of Agriculture and all other federal, state and local regulations concerning care, treatment and use of animals. All activities, whether teaching, research, production or display of animals, and whether or not the activity is funded, must be approved in advance by the committee. The use of animals for any purpose that is not approved in advance by the IACUC may involve severe penalties for non-compliance with institutional policy and could jeopardize the university's Animal Welfare Assurance filed with the OPRR and the NIH. Information may be obtained from the Director of Animal Resources, (334) 844-5667.

Academic Engagement

Any graduate student enrolled in a degree program culminating in a thesis or dissertation will directly engage in research and/or creative scholarship with the major professor, will have access to the tools needed for the research/scholarly activity, will be immersed in the culture of graduate education, will engage in the professional activities of the discipline, and will complete the research/scholarly activity in a reasonable period of time.

Academic Integrity and Student Conduct

Graduate students at Auburn University are expected to adhere to established standards of academic integrity, personal conduct, and professional conduct. The primary code of conduct is detailed in the Auburn University Code of Student Discipline.

Academic units may also define and publish standards appropriate to their disciplines as well as describing the processes for resolving disputes and appealing decisions. Students found in violation of policies defining academic integrity, personal conduct, and professional conduct may be subject to dismissal from the Graduate School.

AUETD Publication and Access Policy

AUETD is an online database of electronic theses and dissertations (ETDs) submitted by Auburn University students in partial fulfillment of the university's graduate degree requirements. Its purpose is to make Auburn University's ETDs widely available to the public and easy to find online. The ETDs in the AUETD database are indexed by Google and other internet search engines and may appear in search results for those search engines. Graduate students who want to limit access temporarily to the full text of their ETD must choose one of the limited access options **during the ETD submission process** (see options below). Students who choose to

limit access to their ETD should be aware that basic bibliographical information about their ETD (including the abstract) will appear in the AUETD database and that the full text of their ETD will become publicly available immediately upon the expiration of the time limit set for limited access. Students who have questions or concerns about this policy are encouraged to contact Clint Lovelace at (334) 844-4112 **BEFORE** submitting their ETD to AUETD.

Limited Access Options

1. **Unlimited access:** Publication in AUETD with unlimited access is immediate and irreversible. Once a thesis/dissertation is published in AUETD, access via the world-wide-web may not be denied or reversed.
2. **Limited access:** Upon request, students may limit access to their thesis/dissertation only to users with a valid AU userid and password for a limited time period. Upon request, limited access is granted for a period of time not to exceed: i) six months; ii) one year; iii) two years; or iv) five years. Unless the student petitions to extend the period of limited access, the thesis/dissertation will be published with unlimited access immediately upon the expiration of the time period.
3. **Withheld access:** Upon request, students may withhold access to their thesis/dissertation to all users for a limited time period. This means that all users, including the students and their advisory committees are denied access to the thesis/dissertation in AUETD. Upon request, withheld access is granted for a period of time not to exceed: i) six months; ii) one year; iii) two years; or iv) five years. Unless the student petitions to extend the period of limited access, the thesis/dissertation will be published with unlimited access immediately upon the expiration of the time period.
4. **Copyright.** If students plan to copyright some or all of their thesis/dissertation, these plans should be discussed in advance with the major professor, especially if the thesis/dissertation includes shared data.

Distance Offerings of Thesis and Dissertation Course Work

Recognizing the importance of global research and professional opportunities, international travel, and the wide-spread availability of technologies that bring remote research and scholarly partners together, the Graduate School allows thesis and dissertation coursework to be completed by means of distance education in approved courses: Research and Thesis (7996) and Research and Dissertation (8996). Graduate students engaged in on-campus study must not be enrolled in Research and Thesis (7996) or Research and Dissertation (8996). At the time of enrollment, the major professor certifies compliance with this requirement.

General Regulations

Regulations listed here represent the minimums of the Graduate School. However, individual departments may impose more stringent requirements and students will be governed by them.

Exceptions to Graduate School Policies

Exceptions may be made to policies of the Graduate School under special circumstances. A person wishing to request an exception should write a letter to the dean of the Graduate School stating the nature of the request and the reasons for it. If a student is making the request, the letter should be submitted first to the major professor, who will write a letter of recommendation. Both letters go to the department head. If a member of the faculty is making the request, the letter goes to the department head, who will write a letter of recommendation. All letters go to the associated college/school dean for approval. Letters and comments then are forwarded to the dean of the Graduate School. A request for an extension of time to meet degree requirements must be justified. It must be accompanied by a proposed schedule for completion and assurance that the student is current in subjects included in the plan of study.

Graduate Certificate Definition

Graduate certificate programs constitute an integrated curriculum, but not necessarily one aligned with a specific academic program. They may exist within programs, bridge programs or offer content widely useable across programs. Graduate certificate programs consist of a minimum of 9 and maximum of 21 hours of graduate-level course work. The course work may be graded or non-graded. A minimum GPA of 3.0 must be maintained on all graded course work in the certificate program.

Graduate certificate programs pertain to graduate students, whether degree seeking or non-degree seeking. A graduate certificate is distinguished from graduate minors in two primary ways. First, graduate minors are intended exclusively for degree seeking graduate students. Graduate certificates may be directed to both degree seeking and non-degree seeking students. Second, there are limits to the number of course credits taken in pursuit of graduate minors that may be applied to a graduate degree (e.g., masters degrees require 21/30 hours to be in the major discipline). The limiting factor in the application of certificate course credits to graduate degrees is departmental policy or advisory committee recommendations. As an example, if a department developed a certificate program intended only for non-degree seeking students, that department could prevent those certificate courses from applying to a degree. However, in the absence of departmental policy, and with the approval of a student's advisory committee, both degree seeking and non-degree seeking students (if they later change status to degree seeking) may include all certificate-related courses toward degree requirements.

When new graduate certificates are proposed, they undergo the full process of curriculum review. This same process applies regardless of delivery method (i.e., on campus and distance). Special requirements for applicants may be negotiated between the certificate proposing program and the graduate school at the time the program is proposed. Consistent with Graduate School policy related to the Masters and Specialist degrees, all requirements for a graduate certificate must be accomplished within 6 years unless departmental criteria for the certificate necessitate a longer time. Certificate Programs that require an exception to this 6-year time limit must be approved by the Graduate Council. Not only must the content of the proposed certificate be appropriate, but the availability of a viable group of graduate faculty to teach the courses in the certificate must be documented. Proposals for graduate certificate programs must identify a specific person who will serve as coordinator. Certificates that bridge departments must have a home department to which all certificate applicants apply. But each affiliated department must also designate a coordinator. Students who fulfill all requirements for a graduate certificate will have the certificate noted on their transcript when the Graduate School receives a memo signed by the certificate coordinator documenting the successful completion of all certificate requirements.

Graduate certificates are to be differentiated from professional development certificates. No comprehensive definition of the latter is offered here, however, in brief, completion of a professional development certificate does not require admission to the Graduate School and is awarded based on participation in non-credit work. The definition of graduate certificate does not limit the ability of departments or other units from defining, implementing, or awarding professional development certificates. Professional development certificates are not subject to the Auburn University curriculum process, nor are their achievement noted on Auburn University transcripts.

Graduate Curriculum Model Change

When a graduate curriculum model is changed, the changes apply only to students who matriculate after the approval of the changes and to currently enrolled students who voluntarily choose to complete the requirements of the new curriculum model. In no case, for students who are continuously enrolled, will the changed curriculum compel them to accumulate additional hours and grade points to graduate. Curriculum model changes are to be implemented at the beginning of the semester in which the largest number of new students typically enroll (fall semester for most programs). Graduate students who have not been enrolled at Auburn University for two or more semesters and who are returning to the same curriculum may be subject to different university, college, school or departmental requirements than those which existed when continuous enrollment ceased.

Institutions with Special Affiliations

By special arrangement with Florida A & M University, the Graduate School application fee is waived for students applying from this institution.

Oak Ridge Associated Universities

Auburn University has been a sponsoring institution of the Oak Ridge Associated Universities (ORAU) since 1946. ORAU is a private, not-for-profit consortium of 82 colleges and universities and a management and operating contractor for the U.S. Department of Energy (DOE) with principal offices located in Oak Ridge, Tennessee. Founded in 1946, ORAU provides and develops capabilities critical to the nation's technology infrastructure, particularly in energy, education, health and the environment. ORAU works with and for its member institutions to help faculty and students gain access to federal research facilities; to keep members informed about

opportunities for fellowship, scholarship and research appointments; and to organize research alliances among our members in areas where their collective strengths can be focused on issues of national importance.

ORAU manages the Oak Ridge Institute for Science and Education (ORISE) for DOE. ORISE is responsible for national and international programs in science and engineering education, training and management systems, energy and environment systems and medical sciences. ORISE's competitive programs bring students at all levels, K-12 through postgraduate, and university faculty members into federal and private laboratories. Other ORAU activities include the sponsorship of conferences and workshops, the Visiting Scholars program and the Junior Faculty Enhancement Awards. Contact Dr. Bryan A. Chin, (334) 844-4784, for more information about ORAU programs.

Graduate Program Option Definition

A graduate program option is a formally approved variation of an academic program by the offering department which meets objectives that may be more specifically focused. These additional objectives are integrated with the basic program. A formal graduate program option must preserve the integrity of the academic program of which it is a variant. Specifically, the formal program option must 1) be in a recognized sub-field of the discipline; and 2) share at least half of the total credits of the degree program. Only formally approved graduate program options are designated on the transcript. Other less formal variants, which may carry the name of "track," "concentration," "emphasis," or similar terms, are not designated on the transcript; however, all academic programs and designated variations (whether called "options," "tracks," "concentrations," "emphases" or some similar term) must be approved by the Alabama Commission on Higher Education (ACHE).

Two-Campus Studies

A student seeking a graduate degree at Auburn University, Auburn University at Montgomery, the University of Alabama, the University of Alabama at Birmingham, or the University of Alabama at Huntsville may take up to half the course work at another of these institutions. The courses taken must be approved in advance by the student's Advisory Committee and the respective graduate deans. All credit must be earned at the two institutions in which the student is working, and none may be transferred from another institution. Students engaged in two-campus studies are required to meet the requirements of continuous enrollment at Auburn University.

Graduate Programs

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- Aerospace Engineering - MAE., MS, PhD (p. 480)
- Agricultural Economics - MS, MAg (p. 481)
- Agronomy and Soils - MS, MAg, PhD (p. 482)
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- Clinical Mental Health Counseling - MEd, Ms, PhD (p. 498)
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- Consumer and Design Sciences - MS, PhD (p. 497)
- Counselor Education - MEd, MS, PhD (p. 498)
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- Economics - MS (p. 501)
- Economics, Applied - PhD track - Agric. Economics (https://nextbulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/agricultureconomicsandruralsociologysmag_major)
- Economics, Applied - PhD track - Economics (p. 502)
- Economics, Applied - PhD track - Forestry (p. 502)
- Educational Foundations, Leadership and Technology - MEd, MS, EdS, PhD (p. 504)
- Electrical and Computer Engineering - MEE, MS, PhD (p. 505)
- English - MA, MTPC, PhD, Graduate Certificate (p. 506)
- Entomology - MS, MAg, PhD (p. 509)
- Finance - MSBA (p. 510)
- Fisheries and Allied Aquacultures - MAq, MS, PhD (p. 511)
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- Geography - MS (p. 513)
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- History - MA, PhD, Graduate Certificates (p. 515)
- Horticulture - MS, MAg, PhD (p. 517)
- Human Development and Family Studies - MS, PhD (p. 518)
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- Public Administration and Public Policy - MPA, PhD, Graduate Certificates (p. 538)
- Real Estate Development - MRED (p. 542)
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Accountancy (MAc)

The Master of Accountancy (MAc) is a professional non-thesis degree program. Criteria for admission and degree requirements are established by the School of Accountancy. This program is available to individuals with a four-year degree business degree from an accredited institution and a strong academic background in the fundamentals of business and accounting.

Requirements for the MAc include 30 semester hours of course work including a capstone course (ACCT 7980/ACCT 7986) and a four and one-half day on-campus residency. The curriculum offers students the flexibility to tailor the program to meet their specific career objectives. Students take only four core courses and choose three accounting electives and three business electives. The MAc degree can be earned as a traditional, on-campus student or through the video-based outreach program.

Information concerning specific requirements may be obtained by visiting www.mac.business.auburn.edu or contacting the Office of Accounting Graduate Programs, at mac@auburn.edu or (334) 844-6207.

Aerospace Engineering - MAE., MS, PhD

Graduate study in aerospace engineering leads to the degrees of master of science, master of aerospace engineering and the doctor of philosophy. The graduate program prepares students for careers in the aerospace industry, in government laboratories and in academia. Studies for the PhD also are designed to produce research scholars.

Applicants should have a bachelor's degree in aerospace engineering or its equivalent from an institution of recognized standing, plus satisfactory GRE scores. Degrees in mathematics, physics and certain other engineering disciplines may also be appropriate for entrance into the graduate program. Applications must be approved by the department's committee on graduate study.

For the master of science, the student must complete an approved program of at least 30 credit hours in aerospace engineering or closely related supporting subjects at the 6000-level or above. The master of science degree requirements include the completion of a thesis under the supervision of a major professor and an advisory committee.

The master of aerospace engineering is a non-thesis degree for which the student must complete an approved program of at least 33 hours of course work at the 6000-level or above. A suitable project in aerospace engineering, culminating in a final written report approved by the student's advisory committee, may be substituted for three credit hours of course work. An oral presentation is also required for the MAE degree.

For both the MS and MAE degrees, at least half of the required credit hours must be completed in aerospace engineering courses.

For the doctor of philosophy degree, the student must complete a minimum of 60 credit hours beyond the bachelor's degree. A plan of study will be arranged on an individual basis and students may elect to specialize in the general areas of aerodynamics, computational fluid dynamics, control theory, flight dynamics, orbital mechanics, propulsion, structures or structural dynamics. A written qualifying examination and a general doctoral examination, with both written and oral parts, are required of all doctoral candidates. An oral defense of the doctoral dissertation is also required of each student.

There is no language requirement for the master's or PhD degrees.

Agricultural Economics and Rural Sociology - MS, MAg, Applied Economics-PhD

Graduate degrees in the Department of Agricultural Economics and Rural Sociology (DAERS) include the master of science (MS) and master of agriculture (MAg) in agricultural economics or rural sociology, as well as the PhD in applied economics. Admission to the masters program in agricultural economics requires a bachelors degree from an accredited institution with 15 semester hours in related courses including economics, sociology, statistics, or related subjects accepted by the Graduate Committee. Applicants are required to have a bachelors degree from an accredited institution and generally are required to have a minimum score of 290 (150 V and 140 Q) and a GPA of 3.0 on all completed coursework. Admission into the MS programs requires a minimum GRE score of 900 (450 V and 450 Q). Admission into the PhD program requires a minimum GRE score of 1000 (400 V and 600 Q). Admission into the Master of Agriculture program requires a minimum GRE score of 800 (400 V and 400 Q). International applicants from non-English speaking countries must have a minimum TOEFL score of 550 (213 computer). Applicants with GRE scores below 400 will be required to complete specified English courses. Applicants to all graduate programs are generally required to have a minimum GRA of 3.0 on the last 60 semester hours of completed coursework.

The master's program in rural sociology is part of an Interdepartmental Graduate Program in Sociology. Admission to the program is administered by co-directors representing the Department of Sociology, Anthropology & Social Work and the Department of Agricultural Economics & Rural Sociology on the Auburn campus and the Department of Sociology at Auburn University-Montgomery. Applicants are required to have a bachelor's degree from an accredited institution and generally are required to have a minimum GRE score of 290 (150 V and 140 Q) and a GPA of 3.0 on all completed coursework. The applicant's resume and letters of recommendation also are considered in making a decision on admission. Further detail on the interdepartmental master's degree in sociology and rural sociology can be found at the Sociology graduate program (p. 544).

The MS in agricultural economics (thesis option) requires a minimum of 30 semester hours of graduate credit with 6 hours of thesis research. Required of all MS students:

ECON 6020	Advanced Microeconomics	3
ECON 7130	Mathematical Economics	3
AGEC 7590	Introduction to Agricultural Econometrics	3
AGEC 7700	Research Methods in Agricultural Economics	3
Total Hours		12

Course substitution for will be allowed for ECON 6020 upon approval of the Graduate Program Officer. A total of 12 hours of core course is required in a program of 24 course hours. The remaining 12 hours can be filled with any graduate-level courses approved by the major professor and thesis committee. At least one-half of all credit hours toward the minimum degree requirement must be earned in courses at the 7000-level or above. All MS candidates must pass a comprehensive examination covering the major field, as well as research and thesis. This usually is a two-hour oral examination upon completion of coursework and the thesis, but the student's advisory committee also may require a written examination.

There is a non-thesis MS option that requires 36 hours of course work. Twelve of these hours must be in core courses:

ECON 6020	Advanced Microeconomics	3
ECON 7130	Mathematical Economics	3
AGEC 7590	Introduction to Agricultural Econometrics	3
AGEC 7700	Research Methods in Agricultural Economics	3
Total Hours		12

The remaining 24 hours can be filled with any graduate-level courses approved by the major professor and graduate committee. At least one-half of all credit hours toward the minimum degree requirement must be earned in courses at the 7000-level or above. The non-thesis option requires a "Plan B" paper that serves as the basis for the student's final oral exam.

Graduate study in rural sociology in either the MS or MA degree is available through the interdepartmental graduate program involving rural sociologists from DAERS as well as sociologists and anthropologists from the Department of Sociology, Anthropology, and Social Work and the Department of Sociology at AUM. More information can be found in the Interdepartmental Programs.

The master of agriculture (MAg) in either agricultural economics or rural sociology requires 32 graduate credit hours, 18 in the major, as approved by the advisory committee. A final oral examination is given by the advisory committee.

The MBA in agribusiness or natural resources and environmental management is offered in coordination with the College of Business. Requirements include 36 graduate credit hours with 24 hours in business and 12 hours in agricultural economics or a closely related area approved by the director of the MBA program and the major professor in DAERS.

A PhD in Economics is offered through the interdepartmental program in economics, which is administered jointly by the Department of Agricultural Economics and Rural Sociology, the Department of Economics, and the School of Forestry and Wildlife Sciences. For students enrolled in the College of Agriculture, the PhD in Applied Economics requires a minimum of 42 credit hours beyond a masters degree or 60 hours beyond a bachelors degree, plus at least 10 hours of dissertation research. All students must take:

ECON 7110	Microeconomics I	3
ECON 7120	Microeconomics II	3
ECON 7210	Macroeconomics I	3
or ECON 7220	Macroeconomics II	
ECON 7310	Econometrics I	3
AGEC 7590	Introduction to Agricultural Econometrics	3
AGEC 7690	Microeconometrics in Agricultural Economics I	3
AGEC 8690	Topics in Agricultural Microeconometrics	3
ECON 7130	Mathematical Economics	3
AGEC 7080	Production Economics I	3
AGEC 7090	Resource Economics II	3
AGEC 7110	Agricultural Economic Development	3
AGEC 7700	Research Methods in Agricultural Economics	3
AGEC 7970	Special Topics in Agricultural Economics	3
AGEC 8060	Theory of Agricultural Markets	3
AGEC 8080	Production Economics II	3
AGEC 8090	Food and Agricultural Policy	3
Total Hours		48

This is a total of 48 hours of coursework in a program of 60 (42) course hours beyond the bachelors (masters) degree. The remaining hours can be filled with any courses at the 6000-level or above approved by the major professor and thesis committee.

The PhD written preliminary examination requirement is satisfied by a research paper due July or October after the first year of coursework. In addition, PhD students with a GPA below 3.5 in their first-year core courses must pass- a written examination that integrates material from the core courses. There is an oral examination on the field and proposed dissertation research (referred to as the PhD prelim oral exam), and a final oral defense of the dissertation. For details on exam requirements, see the DAERS Graduate Handbook posted on the department's web site. After satisfactory completion of the PhD prelim oral exam the student advances to candidacy. PhD students are encouraged to consider a graduate minor in statistics, which requires 12 hours of coursework in statistics (see Statistics Department web site for details).

A Graduate Minor in Agricultural Economics (GMAE) is offered for non-majors wishing to obtain training in the application of economic principles to problems affecting rural communities and households. The GMAE requires 12 credit hours of graduate-level coursework in agricultural economics (6 hours must be at the 7000 level or above). The student's graduate committee must include a faculty member from the agricultural economics department, and the student must demonstrate competence in the application of economic principles to problems in research. The latter requirement is typically met via a chapter or section in the student's thesis or dissertation.

Agronomy and Soils - MS, MAg, PhD

Graduate training in this department enables outstanding students to achieve a high level of scholarly attainment in the soil, crop and environmental sciences. Within these broad areas, research training and experience may be gained in the specialized fields of soil fertility and plant nutrition; soil chemistry; soil genesis, morphology and classification; soil mineralogy; soil physics; soil microbiology;

plant breeding and genetics; weed science; forage, fiber, bioenergy and grain crop production; crop ecology; environmental quality; and turfgrass management.

All graduate students are required to have core undergraduate courses in math, chemistry, physics, botany, plant physiology, genetics, and statistics. The Graduate Studies Committee evaluates each applicant's record and determines prerequisite deficiencies. Qualified students lacking prerequisite subjects can be admitted, but will be required to complete course work to satisfy undergraduate course deficiencies. Students are encouraged to visit the department's web site and view the graduate student handbook for specifics. Admission is based primarily on a combination of required grade point average (GPA) and graduate record examination (GRE) scores and TOEFL tests for international students.

Three degrees are offered:

1. **Master of Science (MS)**, earned only under the thesis option where importance is placed on both classroom and research training. The MS requires a minimum of 30 semester hours 6000 level and above of which 6 hour of thesis research and 2 hours of seminar are included. The student's advisory committee along with the student determines the course of study. In addition, the student must complete research, a written thesis and an oral defense examination of the thesis research.
2. **Master of Agriculture (MAg)** earned under the non-thesis option places more emphasis on classroom training over a broader range of subject matters. The MAg degree requires at least two additional graded courses that replace thesis research hours. An oral defense of course subject matter is required and students must register for GRAD 7000 during the semester the exam is taken. MAg students must write a professional paper as part of a special problems course (AGRN 6970) and present an exit seminar (AGRN 7950) on this paper.
3. **Doctor of Philosophy (PhD)** requires a minimum 60 semester hours of course work beyond the Bachelor of Science. Of the 60 semester hours, 30 must be graded courses 6000 level and above, 20 of which must be completed under the 09 classification at Auburn University while registered in the PhD program. There is no language requirement for this degree. Upon completion of the course work, a PhD student must satisfy a general written examination administered by each member of the graduate advisory committee. A student must pass all parts of the written examination before scheduling the preliminary oral examination. After satisfactory completion of the preliminary examination, the student advances to candidacy. The PhD student will conduct independent research and prepare a dissertation through the guidance and direction of the advisory committee. Upon completion of the dissertation, the student must pass a final oral examination defending the dissertation.

Graduate students in a program requiring a thesis or a dissertation must register for at least one hour of AGRN 7990 or AGRN 8990 per semester. Research Associates and similar classifications that also are graduate students are exempt from this requirement but must complete 10 hours of 7990 in the master's program or 20 hours of 8990 if in a PhD program.

Anatomy, Physiology and Pharmacology

(See Biomedical Sciences (p. 487))

Animal Sciences - MS, MAg, PhD

Graduate study in animal sciences is directed toward the master's and doctoral degrees. The Master of Agriculture (MAg) is offered as a non-thesis degree and prepares students for careers in secondary education, Cooperative Extension and agribusiness. Graduate programs leading to the Master of Science (MS) and Doctor of Philosophy (PhD) degrees provide advanced education and technical training in preparation for careers in public and private sectors related to animal science and technology, food science and technology, animal biotechnology, agribusiness and university-level research and education. Areas of specialization include animal nutrition, biochemistry and molecular biology, microbiology, behavior, growth biology, meat science and muscle biology, quantitative genetics and reproductive biology. Interdepartmental minor programs in cell and molecular biosciences, ecology and environmental sciences are also available.

Prospective graduate students are evaluated for admission to the graduate program by a departmental graduate-program committee. The committee makes a recommendation to the department head based on its review of academic transcripts, three letters of recommendation, a written statement of intent from the applicant, and Graduate Record Examination (GRE) General Test score; in the case of an international student, the Test of English as a Foreign Language (TOEFL) is also required. Prior to making formal application, prospective students are expected to first contact a prospective faculty advisor in the Department whose area of specialization is compatible with the prospective student's interest, and inquire about openings in his/her program. The departmental graduate-program committee will not review an application from a prospective graduate student unless requested to do so by a

prospective faculty advisor, nor will it recommend that a student be admitted unless a prospective faculty advisor agrees to sponsor the applicant's graduate program.

Admission to the MAg degree program requires that the student has the bachelor's degree or evidence of satisfactory progress toward attainment of the bachelor's degree in animal sciences or a related area in the biological sciences. Admission is based primarily on consideration of Grade Point Average (GPA), GRE scores and, in the case of an international student, TOEFL test scores. Applicants lacking suitable preparatory course work in the basic sciences will be required to correct deficiencies by satisfactorily completing additional courses. The MAg degree requires successful completion of a minimum of 30 credit hours, 21 of which must be in the agricultural or related sciences. Additional courses may be required for individual students. Although MAg students do not write a thesis, they are required to take a comprehensive examination and present a report on their comprehensive scholarly project completed under ANSC 7960 (Special Problem). In addition, MAg students are required to present one academic seminar (ANSC 7950) during their program.

Admission to the MS degree program requires that student have the bachelor's degree or evidence of satisfactory progress toward attainment of the bachelor's degree in animal sciences or a related area in the biological sciences. Admission is based primarily on consideration of GPA, GRE scores and, in the case of an international student, TOEFL test scores. Applicants lacking suitable preparatory course work in the basic sciences will be required to correct deficiencies by satisfactorily completing additional courses. The MS degree requires a minimum of 30 credit hours of graduate work, including at least 21 credit hours in the major field of study. The remainder may be in a minor area selected by the student and upon approval by the advisory committee. In addition to the required course work, the student must complete research, a written thesis and a thesis defense examination as defined by the student's advisory committee. Students are required to present two academic seminars ANSC 7950) during their program.

Admission to the PhD degree program usually requires that the student have a master's degree from a recognized graduate program. However, evidence of exemplary potential may be considered as a criterion for admission with a bachelor's degree. The doctoral program emphasizes original, scholarly research and includes significant advanced course work. Admission is based primarily on a consideration of GPA, GRE scores and, in the case of an international student, TOEFL test scores. Following completion of all or most course work, doctoral students are required to successfully complete a comprehensive written examination in their area of specialization before taking the oral General Examination, successful performance in which is required for advancement to candidacy. The PhD degree requires a minimum of 60 credit hours beyond the bachelor's degree and a dissertation describing original research. After completion of the dissertation, the student must pass a final oral examination defending the dissertation. There is no foreign language requirement, but knowledge of a foreign language may be recommended by the student's advisory committee. Doctoral students are required to present three academic seminars (ANSC 7950) during their program.

All graduate students receiving departmental assistantships are expected to be engaged in service to the department's research and education programs as deemed appropriate by the academic advisor and department head. All MS and PhD students must register for at least one credit hour of thesis (ANSC 7990) or dissertation (ANSC 8990) research each term. Classified (FLSA-exempt) research associates holding full admission status in the Graduate School for work toward a graduate degree are exempt from this requirement, but must complete 10 hours of thesis research in a MS program or 20 hours of dissertation research in a PhD program following completion of a master's degree. A PhD degree program undertaken by classified (FLSA-exempt) research associates but not preceded by a master's degree must include 30 hours of dissertation research credit.

Audiology Program - AuD

The Department of Communication Disorders offers the professional clinical degree: the Doctor of Audiology (AuD). As opposed to the PhD research degree, the AuD is a clinical practice degree, designed to provide students with academic and clinical practicum experiences that meet or exceed the requirements of the American Speech-Language-Hearing Association (ASHA) for the Certificate of Clinical Competence in Audiology (CCC-A). The degree program is offered in cooperation with the Auburn University at Montgomery Speech and Hearing Clinic. The AuD degree program spans four years (11 semesters including summers). Details are provided at the Department of Communication Disorders website: <http://www.cla.auburn.edu/communicationdisorders/>.

Most graduates of the AuD program work in clinical settings, such as major hospitals, ENT practice clinics, and private practice facilities. A few graduates teach in the clinical programs in academic institutions.

To complete the program, students must have transportation for courses and clinics in both Auburn and Montgomery as well as for other clinical experiences and internships.

Admission Requirements

A bachelor's degree from an accredited university is necessary. Students with bachelor's degrees in communication sciences and disorders, or equivalent, receive preference. However, highly qualified students from any discipline are considered. Foundation courses in language development, phonetics, and speech anatomy will be added to the curriculum. At least one undergraduate course each of math, life sciences, statistics, physical sciences, and behavioral sciences is an accreditation expectation, and applicants lacking any of these must comply before conferral of the AuD degree.

Potential students apply both to the Graduate School and to the Department of Communication Disorders. Letters of recommendation must be mailed to the program coordinator directly. For computation of ranking formula for selection, applicants must submit one set each of transcripts (for GPA) and GRE scores to both the Graduate School and the Department of Communication Disorders.

The Graduate School web application requires the following:

- Application fee
- Official General Test GRE scores sent directly from ETS
- Official transcripts from each college or university attended sent directly from the issuing institution

The application sent to the program coordinator in the Department of Communication Disorders requires the following:

- The department's application form available on the website
- Three letters of recommendation from former teachers or mentors
- A letter of interest, which will serve as a writing sample
- Transcripts
- Scores from the General Test of the GRE

Those applicants clearing the initial screening will be invited to campus for an interview.

The application deadline is February 1 of each year, with the AuD program starting each fall semester.

Graduation Requirements

The curricular plan of study is a static sequence of academic and clinical coursework. The academic and clinical components of the AuD program interact in a logical progression over a four-year period. A total of 121 semester hours are required for the degree.

The early portion of training is largely academic, and the later portions involve mostly applied clinical work. As the program progresses, the balance of academic and clinical work changes substantially. During the first two years of the program, the emphasis is on academic preparation for clinical work. Students must pass comprehensive exams to enter the third year of the program. In the third year of the program, academic courses are combined with advanced seminars on current issues in clinical practice and the completion of an applied clinical research project referred to as a capstone experience. During this third year of the program, students are engaged in a series of intensive clinical internships at local off-campus clinical settings. Students must successfully complete internships at three different clinical settings during the third year, and they return to campus to participate in seminar course work. In the final year of the program, students participate in a clinical residency during which they work full time for a period of nine months. Clinical residencies may be done at any facility in the United States where a certified audiologist agrees to supervise the student within ASHA guidelines.

Plan of Study

The four-year sequence of academic and clinical course work, including the semester hours, is as follows:

First Year

Fall	Hours	Spring	Hours	Summer	Hours
CMDS 8100 Hearing Science	3	CMDS 8200 Diagnostic Audiology	3	CMDS 8300 Central Auditory Processing	3
CMDS 8110 Auditory Physiology	3	CMDS 8210 Medical Aspects of Hearing Disorders	3	CMDS 8310 Aural Rehabilitation	3
CMDS 8120 Audiology Clinical Methods	2	CMDS 8220 Amplification I	3	CMDS 8570 Evaluation of Research in Speech Pathology and Audiology	3

CMDS 8800 The Neurological Bases of Communication Disorders	3	CMDS 8230 Clinical Level	2	CMDS 8910 Clinical Problems In Hearing	2
CMDS 8910 Clinical Problems In Hearing	2	CMDS 8910 Clinical Problems In Hearing	2		

Second Year

Fall	Hours	Spring	Hours	Summer	Hours
CMDS 8320 Clinical Level II	2	CMDS 8400 Pediatric Audiology	3	CMDS 8520 Hearing Conservation	3
CMDS 8410 Aural Habilitation	3	CMDS 8430 Clinical Level III	2	CMDS 8610 Implant Technology	3
CMDS 8420 Amplification II	3	CMDS 8500 Electrophysiological Procedures in Audiology	3	CMDS 8620 Outcome Measures In Audiology	3
CMDS 8600 Balance Disorders	3	CMDS 8810 Private Practice	3	CMDS 8910 Clinical Problems In Hearing	2
CMDS 8910 Clinical Problems In Hearing	2	CMDS 8910 Clinical Problems In Hearing	2	Comprehensive Exams	

Third Year

Fall	Hours	Spring	Hours	Summer	Hours
CMDS 8510 Clinical Level IV	2	CMDS 8630 Counseling In Audiology	3	CMDS 8920 Clinical Internship	5
CMDS 8920 Clinical Internship	5	CMDS 8920 Clinical Internship	5	CMDS 8950 Audiology Grand Rounds	3
CMDS 8700 Professional Issues	3	CMDS 8950 Audiology Grand Rounds	3	CMDS 8980 Capstone Project	1
CMDS 8950 Audiology Grand Rounds	3	CMDS 8980 Capstone Project	1		
CMDS 8980 Capstone Project	1				

Fourth Year

Fall	Hours	Spring	Hours
CMDS 8940 Clinical Residency	6	CMDS 8940 Clinical Residency	6

Internships and Clinical Residency

As previously stated, students are required to complete several off-campus internships. During their third year, they complete internships in three different locations, and in the final year, they work full-time under the supervision of a certified audiologist.

Other Requirements for the AuD

Along with their course work and internships, students are required to pass comprehensive written exams in order to advance to candidacy. Oral examinations will be conducted if written responses lack detail or clarity. To graduate, students must also successfully complete a capstone project, which can be a planned audiology-related research or clinical project designed to explore a research hypothesis or meet a clinical outcome.

Financial Aid

A limited number of graduate assistantships are available for meritorious students to assist in teaching, research, or clinical roles.

Aviation and Supply Chain Management - MSIS, PhD

The department offers graduate study leading to the master of science and the doctor of philosophy degrees in Business. Applicants to each program must hold a bachelor's degree from a recognized institution. Additionally, students must complete a common body of knowledge curriculum comprising core courses in business. Graduates of business schools will likely have met this requirement; graduates of other programs may be required to complete additional courses to compensate for deficiencies.

The MSIS Program in Business is a non-thesis program that emphasizes practical application of management information systems to managerial problem solving and decision making. Students are required to complete a final project. The program is designed to provide students the opportunity to develop an expertise in a chosen area of management. Applicants to the masters program must have completed an undergraduate degree and a common body of knowledge consisting of core courses in business is required. The MSIS program is offered as a traditional, on-campus program and as a distance learning program.

The PhD program in Business prepares graduates to conduct high-quality research in universities, colleges government and business. Individual flexibility is provided in a program of study that develops the conceptual and methodological skills that graduates need to establish a leadership position in their chosen fields. Objectives of the program are accomplished through the completion of a formal program of study, successful completion of a statistics core, preparation and completion of two examination manuscripts, and dissertation research. Students with assistantships may also be required to teach. Students are expected to have a fulltime presence on campus. Applications to the PhD program must complete a departmental application and an Auburn University Graduate School application. For full consideration, applications must be received no later than February 1, prior to the fall term.

Information concerning specific program requirements may be obtained by visiting www.business.auburn.edu.

Biological Sciences - MS, PhD

The Department of Biological Sciences offers graduate training leading to the MS and PhD degrees in biological sciences; a non-thesis master's degree is optional. Candidates for advanced degrees should have an undergraduate degree in an appropriate area from an accredited institution, with adequate training in biology, chemistry, physics and mathematics. Qualified students lacking pre-requisite subjects can be admitted, but may be required by the departmental graduate studies committee to make up the pre-requisites. A satisfactory score on the general GRE is required (suggested minimums of 500 on verbal and quantitative tests).

A major of at least 30 and 60 semester hours may be taken for the MS and PhD degrees, respectively. MS and PhD students must present at least one departmental seminar on their research during the semester of their oral or final examination. There is no foreign language requirement.

Interdisciplinary minors may be taken in biochemistry, cell/molecular biology, ecology, environmental studies and plant, animal, or microbial molecular biology.

Biomedical Sciences - MS, PhD

All graduate faculty of the College of Veterinary Medicine participate in a college-wide graduate program leading to the master of science and the doctor of philosophy degrees in Biomedical Sciences (BMS or VBMS for curriculum descriptions). Participating departments are: Anatomy, Physiology and Pharmacology (APP); Clinical Sciences (DCS); and Pathobiology (PATHO).

Applicants to the program are required to meet entrance standards established by the College's Graduate Program Committee, the Graduate School, and their intended area of study. Either a baccalaureate degree or the Doctor of Veterinary Medicine (DVM) degree or equivalent is required for admission.

The three departmental programs represent the gateway to areas of concentration. The ten BMS concentrations (MS and PhD programs unless otherwise stated): Anatomy (APP), Animal Genetic Disease (PATHO), Animal Parasitology (PATHO), Clinical Sciences (including all DCS Residency Programs, MS only), Infectious Disease (PATHO), Molecular Oncology (multidisciplinary through PATHO), Pathology (Anatomic and Clinical; PATHO), Pharmacology (APP), Physiology (APP), and Veterinary Sports Medicine (DCS, MS only). The BMS program offers specific enrichment activities including seminars and journal clubs, training in grant writing, participation in scientific meetings, and opportunities to present results of research at national and international meetings.

A graduate student advisory committee is appointed by the dean of the Graduate School for each student upon recommendation of the college's Associate Dean for Research and Graduate Studies. The student's faculty adviser usually serves as the chair of this committee, and the remaining members, selected from the graduate faculty, should have expertise relevant to the student's area of study. The advisory committee develops a plan of study which must be submitted to the college's Associate Dean for Research and Graduate Studies for approval and then to the dean of the Graduate School. Study programs are designed to meet the student's needs and interests while featuring research training and assuring a strong background in biochemistry, biophysics and/or molecular biology. Original research is required for all BMS graduates. Courses must be selected in conformity with the regulations of the college's BMS Graduate Program Committee and the Graduate School. For additional information, visit: <http://www.vetmed.auburn.edu/graduate-program>.

A dual degree program (DDP) allows students to pursue DVM and graduate degrees simultaneously in a time-and content-integrated manner. Graduates, particularly DVM/PhD graduates, will have strong backgrounds both in veterinary medicine and research so as to be well prepared for successful careers in academia, industry and/or specialty clinics. For the DDP program, students must be admitted into the College of Veterinary Medicine program via application to the Auburn University College of Veterinary Medicine and to the graduate program via application to the Auburn University Graduate School. Students already admitted to the Graduate School may apply for admission to the DVM program in order to gain entry to the combined degree program. Such students must meet specific criteria to be allowed to pursue this course of study (<http://www.vetmed.auburn.edu/graduate-program>).

Biosystems Engineering - MS, PhD

Graduate study in Biosystems Engineering leads to master of science or doctor of philosophy degrees. Instruction, research training, and experience are available in various specialized fields such as ecological engineering; bioenergy and bioproducts engineering; food engineering, biological process engineering; biosystems automation and off-highway vehicle engineering. Applicants are expected to have earned a baccalaureate degree in biosystems engineering or a closely related area. A thesis or dissertation is required of all candidates for the MS and PhD degrees, respectively. A minimum of 30 semester hours of graduate-level course work must be completed successfully for the MS degree. Candidates for the MS must pass a comprehensive examination covering the course work, research, and thesis. A minimum of 60 semester hours of graduate-level course work beyond the bachelor's degree must be completed for the PhD degree. Written and oral qualifying examinations and written and oral final examinations are required of all doctoral candidates. All applicants should provide a written statement of purpose for their graduate study, three letters of reference, and all other data required by Auburn University. Additional details about the requirements, assistantships, and policies for graduate study in the Department of Biosystems Engineering are available at www.eng.auburn.edu/bio.

Building Science - MBC

The McWhorter School of Building Science offers the Master of Building Construction (MBC).

The McWhorter School of Building Science's non-thesis master of building construction program provides its students with an unparalleled educational experience. From conceptual idea to post-occupancy of facilities, the degree content offers a practical and industry-oriented study of the interdisciplinary and collaborative processes involved in the planning, financing, design, construction and management of the built environment.

Admission to the master of building construction is competitive, and enrollment is limited. The admissions committee considers GRE scores, undergraduate GPA, educational background, letters of recommendation, prior construction industry experience, and other relevant information.

For students holding an accredited undergraduate degree in construction, the curriculum consists of 35 semester hours of academic credit, including a core of BSCI graduate courses, taken over a period of three academic terms beginning in the fall of each year.

Students with undergraduate degrees in areas other than construction will embark on their graduate careers here at Auburn beginning with a series of six foundation courses commencing the summer term prior to fall admission. Upon successful completion of these classes, their course of study will merge with the other graduate students during fall semester, and may be completed in four academic terms, for a total of 52 hours.

MBC Degree Requirements

Foundation Courses

Offered in Summer and required for students with undergraduate degree in areas other than construction. There are 6 foundation courses worth 17 semester hours of academic credit.

The Core Curriculum

BSCI 7020	Integrated Building Processes I	3
BSCI 7030	Construction Information Management	3
BSCI 7040	Integrated Building Processes II	3
BSCI 7050	Executive Issues in Construction	3
BSCI 7060	Research Methods in Building Science	3

BSCI 7950	Graduate Seminar (I)	1
BSCI 7950	Graduate Seminar (II)	1

All classes are three credit hours.

Electives

Three building science electives (9 credit hours) and one approved graduate elective (3 credit hours) from any field.

Capstone

BSCI 7980, students are required to undertake a capstone project in their final semester. The purpose of the capstone project is to demonstrate the student's ability to independently explore a new topic, demonstrate appropriate application of the materials, and successfully communicate the information in a professional and academically rigorous format.

Graduate students in Building Science with interests in planning, development and urban design can undertake a Minor in Community Planning. Students must complete additional 9 credit hours of Community Planning coursework and notify MBC GPO/CADC Student Services that they are completing the Community Planning minor.

Note 1: Online Master's students are not required to take BSCI 7060 (Research Methods) or BSCI 7950 (Graduate Seminar I and II).

Note 2: Online Master's classes BSCI numbers all end in the number 6 (Example BSCI 7026, BSCI 7036).

Business Administration - MBA, MS, PhD

Graduate programs in Business are fully accredited by AACSB International – the Association to Advance Collegiate Schools of Business (AACSB) – and include the master of business administration, the master of science in business administration with concentrations in finance, and human resources management (currently discontinued), the master of accountancy, the master of science in management information systems, and the doctor of philosophy in business.

Application for admission to graduate programs in Business should be made directly to the Graduate School, with follow-up materials (including letters of recommendation and essays) as required to the specific program. The application should be accompanied by test scores on the Graduate Management Admission Test (GMAT). Supplemental application forms are also required for the MBA program.

Information concerning specific program requirements may be obtained by visiting www.business.auburn.edu.

Chemical Engineering - MChE, MS, PhD

The Chemical Engineering Department offers graduate programs leading to the degrees of master of science and doctor of philosophy. Specialized courses and research training are provided in a wide variety of specialties within chemical engineering or related interdisciplinary areas. Some of these specialties include: surface science, biochemical engineering, catalysis, pulp and paper engineering, environmental engineering, waste conversion, computer-aided process design and simulation, novel bioseparations systems, chemical kinetics and reactor design, biomedical engineering, process control and optimization, thermodynamics, advanced energy research, mass and energy transfer, electrochemical engineering, polymer engineering, interfacial phenomena, process synthesis, material science, nanotechnology, and space science. Additionally, individualized interdisciplinary programs which cross the traditional departmental boundaries are encouraged. These may include collaborative work in chemistry, engineering disciplines, physics, mathematics, agriculture, forestry, biology, microbiology, genetics and health sciences or other areas.

The applicant must hold a bachelor's degree or its equivalent from an institution of recognized standing and must have the pre-requisite undergraduate experience in areas of study relevant to the proposed graduate program. The General Test of the Graduate Record Examination (GRE) is required. If the applicant's undergraduate degree is other than chemical engineering, an individualized plan of study will be developed to impart the critical skills inherent in the bachelor's chemical engineering program. All applicants will be evaluated on an individual basis by the Chemical Engineering Graduate Committee. The admissions committee will evaluate the undergraduate (and graduate) record, GRE scores, letters of recommendation and any experience in research. Non-core, non-duplicating, "A" grade graduate courses from another university are eligible as determined by the Graduate Program Officer for transfer credit (maximum of 6 credit hours for Masters, 12 credit hours for PhD)

The master of science may be earned only under the thesis option. There is no language requirement for this degree. A total of 30 semester hours of work is necessary, including formal courses, seminars and directed reading. Students select three of the following core courses:

CHEN 7100	Transport Phenomena	3
CHEN 7110	Chemical Engineering Analysis and Advanced Transport Phenomena	3
CHEN 7200	Chemical Engineering Thermodynamics	3
CHEN 7250	Chemical Reaction Engineering	3
Total Hours		12

At least 6 additional credit hours must be chemical engineering (CHEN) courses at 6000 or higher level. Each student may include six hours of research and thesis as part of the 30 hours. After completion of the thesis, the student must pass a final oral examination defending the thesis.

The master of chemical engineering, a non-thesis degree oriented toward engineering design and practice, is also offered. It has no residency requirement and can be earned entirely through the Engineering Outreach Program. The degree requires 32 semester hours with a minimum of 16 at the 7000-level. In-depth understanding is provided through a minimum of 21 graduate course hours in the major, chemical engineering (CHEN), plus eleven graduate course hours in technical electives from engineering, science, mathematics, or business which are tailored individually to the student's background and interests. There are three core courses:

CHEN 7100	Transport Phenomena	3
CHEN 7200	Chemical Engineering Thermodynamics	3
CHEN 7250	Chemical Reaction Engineering	3
Total Hours		9

The doctor of philosophy provides for advanced course work and emphasizes original, creative research. A dissertation embodying the results of this research represents the major portion of the requirements for this degree. A minimum of 60 semester hours of graduate work past the bachelor's degree is necessary. Each student may include 10 hours of research and dissertation as part of the 60 hours. Four calendar years beyond the bachelor's degree or three past the master's degree usually are needed to complete the PhD. There are four (4) core graduate courses for a total of 12 credit hours:

CHEN 7100	Transport Phenomena	3
CHEN 7110	Chemical Engineering Analysis and Advanced Transport Phenomena	3
CHEN 7200	Chemical Engineering Thermodynamics	3
CHEN 7250	Chemical Reaction Engineering	3
Total Hours		12

Additional 18 credit hours of chemical engineering (minimum 9 credit hours) and/or other elective courses at 6000 level or higher is required. The remaining 30 credit hours are composed of research and dissertation (minimum 10 credit hours), formal courses (6000 level or higher), and graduate seminar.

The General Doctoral Examination consists of two parts, the "PhD Qualifying Examination" and the "PhD Preliminary Oral Examination". The PhD Qualifying Examination will be successfully fulfilled by earning a B or higher in each of the four (4) core graduate courses:

CHEN 7100	Transport Phenomena	3
CHEN 7110	Chemical Engineering Analysis and Advanced Transport Phenomena	3
CHEN 7200	Chemical Engineering Thermodynamics	3
CHEN 7250	Chemical Reaction Engineering	3
Total Hours		12

At the PhD Preliminary Oral Examination, the student will present to their Faculty Research Advisory Committee a thorough description and comprehensive discussion of his/her proposed dissertation research. Successful completion of the Preliminary Oral Examination requires unanimous approval of the student's Faculty Research Advisory Committee. Upon successful completion of the PhD Qualifying and Preliminary Oral Examinations, the student advances to candidacy. After completion of the dissertation, the student must pass a final oral examination defending the dissertation.

There is no language requirement for the PhD.

Chemistry and Biochemistry - MS, PhD

Graduate study in chemistry leads to the M. S. and PhD degrees. Entering students must take four of the five required core courses with the consent of their advisor:

Select four of the following:

12

CHEM 7100	Advanced Inorganic Chemistry
CHEM 7200	Advanced Organic Chemistry I
CHEM 7300	Advanced Physical Chemistry
CHEM 7500	Advanced Analytical Chemistry
BCHE 7200	Advanced Biochemistry I

Total Hours

12

By the end of the second semester, graduate students must submit a plan of study which details the courses which will be taken. This is done with the assistance of the major professor and with the consent of the student's advisory committee. For the MS the plan of study will consist of a minimum of 30 hours, including the core courses listed above (12 hours);

CHEM 7990	Research and Thesis (4 hours)	1-10
CHEM 7750	Formal Presentations in Modern Chemistry (1 hour)	1
CHEM 7950	Seminar (4 hours)	1

For the PhD 60 hours of courses must be completed. These must include the core courses listed above (12 hours),

CHEM 8990	Research and Dissertation (10 hours)	1-10
CHEM 7750	Formal Presentations in Modern Chemistry (2 hours)	1
CHEM 7950	Seminar (6 hours)	1

The rest of the courses usually are taken in the major area. Directed Study, CHEM 7930, may be taken for a maximum of 15 hours. MS students must pass three cumulative examinations; PhD students must pass 6 cumulative exams and an oral general examination. All graduate students must orally present their research and defend their theses or dissertations in the final oral examination.

Civil Engineering - MCE, MS, PhD

The Department of Civil Engineering offers graduate-level instruction and research programs leading to the degrees of Master of Civil Engineering (MCE), Master of Science (MS) and Doctor of Philosophy (PhD). These programs provide qualified students opportunities for advanced training and specialization and enable them to gain experience conducting engineering research and interpret and communicate their findings. The department offers programs in Construction Engineering and Management, Environmental Engineering, Geotechnical Engineering, Hydraulics/Hydrology, Pavements and Materials, Structural Engineering, and Transportation Engineering. Coursework may be taken in supportive disciplines including applied statistics, building science, computer science or mathematics, with sufficient justification.

Applicants for the graduate programs must have an earned baccalaureate degree (BCE, BS or BSCE) in Civil Engineering or a closely related area and must have completed such formal training as to warrant advanced study in the major and minor fields. Applicants from related disciplines may be required to take prerequisites, as determined by the relevant specialty program and the department. There is no formal foreign language requirement.

All MS candidates must write a thesis. At least 30 semester hours of graduate-level course credit must be completed satisfactorily. At least six of the 30 hours must be in CIVL 7990 and at least 24 hours must be in graduate course work other than CIVL 7990. Candidates must pass a comprehensive examination covering the coursework, research and thesis.

Admission requirements for MCE are the same as those for MS. MCE students must take at least 30 semester hours of graduate-level courses. At least three of the 30 hours must be in CIVL 7980 and at least 27 hours must be in graduate course work other than CIVL 7980. Candidates must pass a comprehensive examination covering the course work and the engineering project involved.

PhD applicants must have earned a BS or master's degree in Civil Engineering or a related area. Applicants from other related disciplines may be required to take prerequisites determined by the relevant specialty program and the department.

The PhD is conferred in recognition of mastery of a specific field of knowledge and a contribution to that engineering discipline through the doctoral dissertation. The degree is a research degree, requiring not only completion of certain technical requirements but proof of the candidate's ability to work independently in an engineering research environment.

To be qualified as a PhD candidate, an admitted doctoral student must pass a written comprehensive examination and a follow-up oral critique administered by the student's advisory committee. The examination may not be taken sooner than one year after the student begins doctoral course work. Additional academic preparation may be prescribed by the advisory committee to strengthen deficiencies identified by the examination, or the student may be suspended from the program. One retake may be permitted after the student has completed the prescribed preparation. Upon successful completion of the examination, the student becomes a candidate for the PhD.

After successfully completing the comprehensive examination, the doctoral candidate will defend the proposed dissertation topic, which must represent a significant contribution to the state-of-the-art. This defense may be included in the oral critique of the comprehensive examination if the advisory committee agrees. Once the committee approves the research topic, the doctoral candidate may proceed with the research and dissertation. When it is completed, the candidate defends the completed dissertation before the advisory committee and the outside reader appointed by the Graduate School.

Communication - MA, Graduate Certificate

The Department of Communication and Journalism offers the Master of Arts in Communication and the Graduate Certificate in Communication Studies.

Students earning the MA in Communication have excellent employment opportunities working for organizations ranging from Fortune 100 companies to non-profit groups. For those interested in pursuing a doctorate, our graduates have been admitted to the best PhD programs in the Communication discipline.

For more information about both the MA and the Graduate Certificate, see <http://www.cla.auburn.edu/cmjn/>. Program statistics (e.g., number of students accepted, average GRE scores, etc.) and additional information on the application process are available on that website.

Master of Arts in Communication

Application Process

Applicants for the MA must hold bachelor's degrees from an accredited college or university and must take the General Test of the GRE. They must submit a statement of purpose, undergraduate transcripts, GRE scores, a writing sample, recommendation review forms, and letters of recommendation for consideration by an admissions committee.

They should ensure that these materials are submitted to the Graduate School web application:

- Application fee
- Official scores for the General Test of the GRE
- Official transcripts for every institution attended

They should ensure that these materials are submitted to the graduate program in the Department of Communication and Journalism:

- Statement of purpose
- Recommendation review forms
- Three letters of recommendation
- Writing sample

Deadlines for application materials are posted on the departmental website.

MA Degree Requirements

Students may pursue either a thesis or a non-thesis option for the MA in Communication. The MA-thesis option requires 31 hours beyond the bachelor's degree, including the thesis. The MA-non-thesis option requires 30 hours beyond the bachelor's degree, including appropriate field experience.

Students without a bachelor's degree in communication (i.e., communication, journalism, public relations, radio/television/film) must earn an additional 9 graduate credit hours.

The following courses are required for the MA in Communication:

- COMM 7000 Communication Theory
- COMM 7010 Historical, Descriptive, and Critical Approaches to Communication Research
- COMM 7020 Empirical Approaches to Communication Research

Upon completion of the required classes, students must pass a written qualifying examination covering material presented in these three courses before continuing in the degree program. All remaining hours are elective course work.

MA-thesis option students will enroll in a minimum of 4 thesis hours (COMM 7990). MA-non-thesis option students will enroll in a minimum of 3 non-thesis project hours (COMM 7980).

All students seeking the master's degree must pass comprehensive exams prior to graduation. The exams include both written and oral components. The nature of the written portion of the comprehensive exams will vary depending on the choice of the thesis or non-thesis option. For students choosing the thesis option, the thesis typically constitutes the written portion of the comprehensive examination. Students choosing the non-thesis option must pass a written examination covering the program of study as well as any research and special project/internship/field experience.

There is no foreign language requirement.

Graduate Certificate in Communication Studies

Application Process

Applicants for the Graduate Certificate must hold bachelor's degrees from accredited colleges or universities and must take the General Test of the GRE. An admissions committee evaluates the applicant's statement of purpose, undergraduate record, GRE scores, writing sample, recommendation review forms, and letters of recommendation.

Applicants should ensure that these materials are submitted to the Graduate School web application:

- Application fee
- Official scores for the General Test of the GRE
- Official transcripts for every institution attended

They should ensure that these materials are submitted to the graduate program in the Department of Communication and Journalism:

- Statement of purpose
- Recommendation review forms
- Three letters of recommendation
- Writing sample

Requirements

The Graduate Certificate in Communication Studies requires 18 hours beyond the bachelor's degree. It does not require a thesis or field experience. The following courses are required for the Graduate Certificate in Communication Studies:

- COMM 7000 Communication Theory
- COMM 7010 Historical, Descriptive, and Critical Approaches to Communication Research
- COMM 7020 Empirical Approaches to Communication Research

Upon completion of these three required classes, students must pass a written qualifying examination covering material presented in these three courses. The remaining 9 hours are elective course work.

Deadlines for application materials are posted on the departmental website.

Financial Aid

A limited number of competitive graduate teaching assistantships are available. To get more information about the assistantships and to learn how to apply, please visit the following website: <http://www.cla.auburn.edu/cmjn/graduate-program/assistantships/>. Students enrolled in the Graduate Certificate in Communication Studies are not eligible for financial aid.

Communication Disorders - MCD, MS

The Department of Communication Disorders offers master's programs in speech-language pathology accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (ASHA). Two degree options are available: Master of Science in Communication Disorders (MS) and Master of Communication Disorders (MCD). The MS requires a thesis, while the MCD has no thesis requirement. Neither degree requires expertise in a foreign language. Information about these degrees is available at <http://www.cla.auburn.edu/communicationdisorders/>.

The plan of study for either degree may be designed according to the student's career interests; however, the curriculum planned must conform to academic and practicum requirements for ASHA certification and Alabama licensure. Students then are prepared for careers in school systems, clinics, hospital/rehabilitation centers, physicians' offices, and private practice and for pursuing the doctoral degree.

Admission Requirements

The admission requirements are the same for both degrees because the choice of degree program is not made formally until the first semester of graduate study.

A baccalaureate degree from an accredited university is necessary. Those with a degree in communication sciences and disorders, or equivalent, complete the Master of Communication Disorders (MCD) degree with 55 semester credit hours; additional thesis hours are optional for the Master of Science (MS) degree. Highly qualified students from any undergraduate discipline are considered for admission; however, certain foundation courses are necessary and may bring the MCD degree total to 95 semester hours. General education courses on the undergraduate transcript should include at least one course in each of the following areas: math, statistics, life science, physical science, and behavioral science. As this background is expected by the program's accreditation agency, any deficiency must be fulfilled before conferral of the master's degree in this program. Students who do not have an undergraduate course in neuroanatomy will be required to take that course as part of their graduate program.

Some application materials are sent directly to the Graduate School and other materials are sent directly to the Department of Communication Disorders (1199 Haley Center, Auburn, AL 36849-5232).

Materials sent to the Graduate School web application include:

- Graduate School application
- Application fee
- Official transcripts from all institutions attended
- Official scores from the General Test of the GRE

Materials sent directly to the department include:

- Applicant Information Form, available on departmental website
- Three letters of recommendation, completed on the form downloaded from the departmental website and sent to the department by the recommender
- Application for graduate assistantship, available on departmental website

All application materials are reviewed by the departmental committee in speech-language pathology.

The application deadline for all materials is February 15 of each year with the degree program starting each fall semester.

Graduation Requirements

The MS in Communication Disorders requires a minimum of 54 hours of graduate course work, including at least four hours of CMDS 7990 Research and Thesis, and an appropriate internship experience, CMDS 7920 Internship in Speech-Language Pathology.

The Master of Communication Disorders requires a minimum 55 hours of graduate course work and appropriate internship experience, CMDS 7920 Internship in Speech-Language Pathology.

Required Courses

This is the course schedule for both degrees, with the exception of CMDS 7990 Research and Thesis (4 hours), which is required only for the MS students. Although they are required to write a thesis, MS students do not take comprehensive exams. CMDS 7990 Research and Thesis is not required for MCD students, who take comprehensive exams rather than write a thesis.

First Year

Fall	Hours	Spring	Hours	Summer	Hours
CMDS 7570 Evaluation of Research in Speech Pathology and Audiology	3	CMDS 7550 Adult Aphasia	3	CMDS 7540 Advanced Voice Disorders	3
CMDS 7860 Speech Science	3	CMDS 7720 Clinical Problem Solving II	2	CMDS 7840 Augmentative and Alternative Communication	3
CMDS 7700 Clinical Problem Solving I	2	CMDS 7530 Advanced Fluency Disorders	3	CMDS 7590 Language Disorders: School-Age	3
CMDS 7970 Special Topics Seminar	1-3	CMDS 7500 Clinical Problems in Speech	1	CMDS 7500 Clinical Problems in Speech	1
CMDS 7500 Clinical Problems in Speech	1	CMDS 7820 Dysphagia	3		
CMDS 7520 Language Disorders: Birth to Five	3				

Second Year

Fall	Hours	Spring	Hours
CMDS 7810 Motor Speech Disorders	3	CMDS 7920 Internship in Speech-Language Pathology	5
CMDS 7560 Craniofacial Anomalies	3		
CMDS 7740 Clinical Problem Solving III	2		
CMDS 7510 Advanced Articulation/Phonological Disorders	3		
CMDS 7970 Special Topics Seminar	1-3		
CMDS 7500 Clinical Problems in Speech	1		

Clinical Experience Requirements

In addition to academic course work requirements, both the MCD and MS degree programs require a minimum of 400 clock hours of supervised clinical experience in the practice of speech-language pathology.

Financial Aid

The department has a limited number of graduate assistantships available. These assistantships must be applied for using the Application for Assistantship form downloaded from the departmental website. Assistantships are awarded based on academic performance and research experience.

Community Planning - MCP

The professionally accredited Graduate Program in Community Planning trains future practitioners in the planning and design of sustainable urban communities at scales ranging from the neighborhood to the region. The program prepares students with diverse educational backgrounds for professional planning careers in both the public and private sectors through a course of study that promotes the understanding and application of planning methods and policies that collectively shape the physical, social, economic and environmental aspects of communities. Graduates are skilled at describing and analyzing urban processes and conditions; at creating and evaluating alternatives to shape future growth and development; and at devising and recommending appropriate mechanisms for the implementation of their planning proposals. The Master of Community Planning (MCP) is a professional, non-thesis degree. Students will normally earn the degree in two academic years by successfully completing 45 credit hours of course work, including a capstone (or synthesis) studio and a comprehensive examination. The curriculum model incorporates lecture, studio, and seminar courses; and is structured to allow select students the opportunity to complete their final semester (or final academic year) at the School's Center for Architecture and Urban Studies in Birmingham. The program offers dual degree options with architecture,

landscape architecture and public administration (each of which requires a separate application); and students may complete a minor in economic development. Enhanced opportunities for interdisciplinary teaching and learning are offered by the program's distinctive context within the School of Architecture, Planning and Landscape Architecture. Entering students must hold a degree from an accredited institution and have acceptable GRE scores.

Master of Community Planning (45 credit hours)

First Year

Fall	Hours	Spring	Hours
CPLN 5460/6460 Digital Applications	2	CPLN 5450/6450 Planning History and Theory	3
CPLN 6010 Introduction to Community Planning	3	CPLN 6000 History and Theory of Urban Form	3
CPLN 6050 Urban Economics	3	CPLN 7240 Quantitative Methods for Planning	3
CPLN 7200 Urban Design Studio	5	CPLN 7430 Planning Law and Ethics	3

Second Year

Fall	Hours	Spring	Hours
CPLN 5060/6060 Transportation and Mobility	3	CPLN 6970 Special Topics: Current Issues in Planning	3
CPLN 5070/6070 Planning and the Environment	3	CPLN 7600 Synthesis Studio I	5
CPLN 5080/6080 Housing and Neighborhood Conservation	3		
CPLN 5090/6090 Community and Economic Development	3		

* Comprehensive exam is taken after fall semester of second year and must be passed prior to enrollment in CPLN 7600: Synthesis Studio

** CPLN 6970 courses comprise directed electives grouped by topic listed -- student must complete one (1) course from each group, as selected by student

Computer Science and Software Engineering - MSwE, MS, PhD

Graduate study in the Department of Computer Science and Software Engineering (COMP) leads to the non-thesis master of software engineering (MSwE) or research oriented master of science (MS) and doctor of philosophy (PhD) degrees in computer science and software engineering. All applications are reviewed by the COMP Graduate Admissions Committee.

To enter the MS or the MSwE, the student must hold a bachelor's degree or its equivalent from an institution of recognized standing. The student also must have the pre-requisite undergraduate experience in areas of computer science and/or software engineering. If the student has deficiencies in the pre-requisites, he or she will be required to take appropriate undergraduate courses. All applicants must submit Graduate Record Examination scores for the general test.

The MS program requires 30 semester credit hours, including six credit hours for research and thesis. The MSwE program requires 33 semester credit hours, including three credit hours for the software engineering design project. There is no language requirement.

For the PhD program, the applicant must hold a master's degree or have successfully completed a minimum of one academic year of graduate study, from an institution of recognized standing in an area related to the proposed doctoral study. All applicants must submit GRE scores for the general test. The student will take a written qualifying examination soon after gaining admission to the program. Additional examinations, as described in the general Graduate School requirements, are given throughout the program, culminating with the defense of the dissertation. There is no language requirement for the PhD. The program typically includes at least one academic year of course work and one year of research beyond the master's level. The PhD program requires a minimum of 66 semester credit hours of course work beyond the bachelor's level, including 18 hours of research and dissertation.

Consumer and Design Sciences - MS, PhD

Graduate study in the Department of Consumer and Design Sciences, College of Human Sciences, leads to the master of science and the doctor of philosophy. Major focus areas are apparel design or merchandising, interior design, and consumer behavior. The department emphasizes integration of basic and applied knowledge from multiple fields to enhance professional skills for careers in textile and apparel product development and design; production management; retail management; merchandising in textile and apparel retail or design firms; design of residential and commercial interiors; and college teaching and research. A foreign language is not required. Entrants with limited undergraduate backgrounds in their chosen area may need to complete some undergraduate courses. Graduate teaching and research assistantships are available on a competitive basis.

Applicants for the M.S. must have a bachelor's degree or its equivalent from an accredited college or university. The General Test of the Graduate Record Examination is required. The admissions committee will evaluate the undergraduate record, GRE scores, letter of intent, resume, and three letters of recommendation. International applicants must submit the Test of English as a Foreign Language and meet the Graduate School admission requirements for this test.

The M.S. degree offers a Thesis Option and a Non-Thesis Option. The Thesis Option requires 30 semester hours; the Non-Thesis Option requires 36 semester hours. Individually designed focus areas incorporate courses in Consumer and Design Sciences and other departments. At least 21 semester hours must be in apparel, interiors, or consumer-related courses.

Requirements common to both options include:

CADS 7040	Protocol for Graduate Study	1
CADS 7050	Research Methods in Consumer and Design Sciences	3
CADS 7060	Survey of Consumer and Design Sciences Research	3
One Graduate level Statistics course		3
One Graduate level Theory Course		3
Electives to support thesis/graduate project topic or to meet career goals ¹		14-17
Select one of the following:		3-6
Graduate Project (Non-Thesis Option) 3-6 credit hours		
Research and Thesis (Thesis Option) 4-6 credit hours		
Total Hours		30-36

¹ At least one of these electives must be a CADS theory course

The Non-Thesis Option requires a Comprehensive Written Exam over course work in the Plan of Study and an oral presentation of the completed Graduate Project to the Graduate Advisory Committee. CADS 7920 Graduate Internship is recommended as part of the Non-Thesis student's Plan of Study. The Thesis Option requires an Oral Examination and Defense of the completed Thesis, to be administered by the Graduate Advisory Committee.

An Accelerated BS/MS degree program is available in both Apparel Merchandising, Design and Production Management and in Interior Design. Please contact the Department of Consumer and Design Sciences for more information about these accelerated programs.

Applicants for the PhD must have a master's degree or its equivalent from an accredited college or university. The General Test of the Graduate Record Examination is required. The admissions committee will evaluate the undergraduate and graduate record, GRE scores, letter of intent, resume, and three letters of recommendation. International applicants must submit the Test of English as a Foreign Language and meet the Graduate School admission requirements for this test.

The PhD focuses on the integration of the science of design and consumer behavior within a research-based product management approach for application in the global economy. A minimum of 60 semester hours of graduate level course work is required. At least 30 of these hours must be graded graduate level course work; at least 20 of these hours must be completed at Auburn University.

Individually designed focus areas incorporate courses in Consumer and Design Sciences and other departments. At least 20-25 graduate credit hours, excluding thesis and dissertation hours, must be in Department of Consumer and Design Sciences courses (or the equivalent).

Requirements include:

CADS 7040	Protocol for Graduate Study	1
CADS 7050	Research Methods in Consumer and Design Sciences	3
CADS 7060	Survey of Consumer and Design Sciences Research	3
At least 2 CADS graduate level theory courses		6
At least two Graduate level Statistics courses		6-8
Electives to support dissertation topic and/or to meet career goals		27-31
Research & Thesis ^{1,2}		4
Research & Dissertation		10
Total Hours		60-66

¹ If student has a non-thesis Master's degree, a manuscript suitable for submission to a research journal must be prepared and submitted prior to beginning the dissertation research.

² If thesis hours are not applicable, 4 hours must be satisfied with approved electives.

PhD students must pass a Comprehensive Written Examination after completion of the course work and prior to proceeding to the dissertation. The General Oral Examination includes the presentation and defense of the dissertation proposal. Upon successful defense of the proposal, the student enters the candidacy for the Doctor of Philosophy degree and proceeds with the dissertation research. The Final Oral Examination is the defense of the dissertation, which must receive unanimous approval by the Graduate Advisory Committee and the Outside Reader before the PhD can be conferred.

Counselor Education and Counseling Psychology - MEd, MS, PhD

Programs include graduate degree programs leading to the master of education (non-thesis option), master of science (thesis option), and doctor of philosophy. The programs offered are listed below:

- Clinical Mental Health Counseling (<http://education.auburn.edu/programs/cca>) (option) - MEd/MS
- School Counseling (<http://education.auburn.edu/programs/cps>) (option) – MEd
- Counseling Psychology (<http://education.auburn.edu/programs/cop>) – PhD
- Counselor Education (<http://education.auburn.edu/programs/ced>) - PhD

Master's degree programs (MEd/MS)

Master's programs in counselor education with areas of specialization in clinical mental health counseling and in school counseling prepare students for entry-level professional positions as counselors in a variety of human service agencies such as public schools, community mental health centers, drug and alcohol treatment programs, and university counseling centers. These programs are accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP). The master's degree program in school counseling also is approved by the Alabama State Board of Education. The College of Education is accredited by the National Council for Accreditation of Teacher Education (NCATE).

Application to the master's programs includes: meeting Graduate School requirements for admission, submission of the departmental application and all undergraduate transcripts, a GPA of at least a 2.75 on undergraduate coursework, and three letters of recommendation. In addition, admission requirements for the master's program in school counseling are in compliance with those established by the Alabama State Board of Education, including clear background check. All applications for admission are reviewed by program faculty with admission decisions occurring in the spring semester; initial enrollment usually only occurs in the fall semester.

Degree requirements for master's level program in clinical mental health counseling include a minimum of 60 semester hours. Degree requirements for the school counseling program include 51 or 57 semester hours depending on program track.

Students in all master's level programs must pass a comprehensive graduation exam which currently consists of the Counselor Preparation Comprehensive Exam (CPCE) and complete other assigned work and/ or examinations designed to evaluate students' skills in areas related to program goals. All master's programs require extensive extramural practicum and internships in placements related to the area of professional preparation. In addition, program requirements for the master's degree in school counseling include a passing score on the Praxis II subject assessment 0420 School Guidance and Counseling; school counseling students may be subject to other components of the Alabama Prospective Teaching Testing Program depending on prior professional educator certification.

More specific information about admission and degree requirements for master's level programs in clinical mental health counseling and school counseling can be accessed using the hyperlinks at the end of this section.

Doctoral degree programs (PhD)

Doctoral programs are offered in counseling psychology and counselor education. These programs provide advanced preparation in the delivery of counseling and psychological services and prepare students for education, supervisory and leadership roles in schools, universities, hospitals, VA facilities, human service agencies, and private mental health practices. The doctoral programs also require that students demonstrate skills to independently conduct research through the dissertation. The PhD in counseling psychology is accredited by the American Psychological Association (APA); the PhD in counselor education is accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP).

Applicants to the PhD programs must satisfy the Graduate School's admission requirements. For counselor education, doctoral applicants must have completed an approved master's degree program prior to enrollment. For counseling psychology, doctoral applicants may apply with a bachelor's degree, some graduate coursework, a master's degree, or a doctoral degree (the latter in the case of respecialization). To apply for admission to doctoral level programs in counseling psychology or counselor education prospective students must submit an application to the Graduate School and the program application form. This application includes submission of ALL transcripts from previous graduate and undergraduate coursework, scores from the GRE, and at least THREE letters of reference. Note: It is recommended that at least two of these letters speak to the individual's academic abilities.

Provided that general Graduate School admission requirements are met, program admissions committees consider all submitted materials and determine whether to issue an invitation for an interview. Admission decisions occur in the spring semester; initial enrollment usually only occurs in the fall semester.

The number of hours required for the two doctoral programs varies. For counseling psychology, a student entering with no previous graduate coursework would be required to complete a minimum of 89 to 94 credit hours depending upon the desired track. Prior to obtaining doctoral candidacy status, all doctoral students must satisfactorily complete a psychotherapy project and a general written and oral examination. Doctoral students must register for at least 10 semester hours of doctoral research while completing a dissertation (included in the credit hours described above). The program takes a minimum of four years to complete (three years of coursework and research and one year of full-time internship consistent with the requirements of APA-accredited internship sites). Most students require five or more years to complete the degree.

The number of hours required for the doctoral degree in counselor education is 61 (+48 master's credit hours that must be completed prior to admission to the program). This program of study is accredited by CACREP. Prior to obtaining doctoral candidacy status, all doctoral students must satisfactorily complete a general written and oral examination. The written exam consists of a doctoral level portfolio integrating professional skill and competence development. Doctoral students must register for at least 10 semester hours of doctoral research while completing a dissertation (included in the credit hours described above). The program incorporates a focus on the development of research, teaching, supervision, and advanced counseling skills. The program also requires extensive preparatory work in practicums and internship. Practicums will be completed in teaching, supervision and counseling practice. Typically the program takes a minimum of three years, full-time academic enrollment, to complete (two years of coursework and one year of internship and dissertation research).

Additional information

Detailed admission and program requirements for the department's multiple areas of graduate study can be accessed at Academic Programs (<http://www.education.auburn.edu/programs/degreeoption.html>) on the College of Education's website.

Curriculum and Teaching - MEd, MS, EdS, PhD

The Department of Curriculum and Teaching offers graduate certificates and graduate degree programs leading to the master of education (non-thesis option), master of science (thesis option), specialist in education, and doctor of philosophy. All graduate teacher certification programs are approved by the Alabama State Board of Education. Auburn University's College of Education is accredited through the National Council for Accreditation of Teacher Education (NCATE). Music education programs are also accredited by the National Association of Schools of Music (NASM).

Master's Degree Programs (MEd/MS)

Master's degree programs include both alternative and traditional programs. Alternative master's programs offer qualified students who hold non-teaching baccalaureate degrees a route to initial teacher certification while simultaneously earning a master's degree; traditional master's programs offer advanced study for individuals who hold a bachelor's level professional educator certification.

Applicants to master's degree programs must satisfy the Graduate School's admission requirements. Departmental admission requirements include a bachelor's degree from an accredited college or university, academic good standing at the institution last attended, competitive GRE scores, a GPA of at least a 2.75 on undergraduate coursework, letters of recommendation, current resume, clear background check, and approval by the department. In addition, applicants to alternative master's programs must satisfy the State's teaching field admission requirements, and applicants to a traditional master's programs must hold a valid bachelor's-level professional educator certificate.

Degree requirements for master's level certification programs are in compliance with regulations established by the Alabama State Board of Education. Alternative master's programs range from 34-43 hours; additional undergraduate coursework may be required. Degree requirements include a semester long, full-time internship; satisfactory completion of the Alabama Prospective Teacher Testing Program including submission of a passing score on each of the Basic Skills Assessments (Applied Mathematics, Reading for Information, and Writing) and a passing score on the appropriate Praxis II subject assessment prior to internship; and a written comprehensive exam. Alternative master's programs typically take a minimum of four semesters to complete if enrolled fulltime.

Traditional master's programs require a minimum of 30 semester hours and a comprehensive examination. Additional degree requirements for master's certification programs in reading education and English for speakers of other languages include a passing score on the appropriate Praxis II subject assessment.

Specialist in Education Degree Programs (EdS)

Applicants to EdS programs must satisfy the Graduate School's admission requirements. Departmental admission requirements include a master's degree from an accredited college or university, academic good standing at the institution last attended, competitive GRE scores, letters of recommendation, current resume, a valid master's-level professional educator certificate, clear background check, and approval by the department.

Degree requirements for specialist level teacher certification programs are in compliance with regulations established by the Alabama State Board of Education. Specialist programs include a minimum of 30 semester hours beyond the master's degree. Additional requirements include satisfactory completion of a field project and a written comprehensive exam.

Master's and Specialist Level Certification

Individuals completing State-approved master's level certification programs are eligible to apply for Alabama Class A certification; individuals completing State-approved specialist level certification programs are eligible to apply for Alabama Class AA certification. Individuals seeking certification in states other than Alabama are responsible for contacting those state certification offices to obtain their application form and requirements. The State of Alabama signs the National Association of State Directors of Education and Certification (NASDTEC) Interstate Agreement which facilitates the applications of program graduates when they apply for certification in other states.

Doctor of Philosophy Degree Programs (PhD)

Applicants to PhD programs must satisfy the Graduate School's admission requirements. Departmental admission requirements include a competitive GRE score, current resume, statement of purpose, letters of recommendation, and approval by the department.

All doctoral programs require a minimum of 80 semester hours beyond the bachelor's degree. Research methods, statistics, and foundations of education courses are components of all doctoral programs. The remaining hours are divided between the area of specialization and approved support courses. Plans of study for students in secondary education fields must contain at least 30 semester hours of graduate courses in the appropriate teaching fields. After satisfactory completion of coursework and a general written and oral examination, the student advances to candidacy. Doctoral students must register for at least 10 semester hours of doctoral research while completing a dissertation.

Graduate Certificates

The Department of Curriculum and Teaching offers a graduate certificate in Teaching English as a Second Language (TESL)/Teaching English as a Foreign Language (TEFL). The Department in collaboration with the Department of Educational Foundations, Leadership and Technology also offers a graduate certificate in Adult Education and English Language Teaching.

Additional Information

Detailed admission and program requirements for the department's multiple areas of graduate study can be accessed at Academic Programs (<http://www.education.auburn.edu/programs/degreeoption.html>) on the College of Education's website.

Degree Programs

Click on a degree program link to view more information about the program at the College of Education website.

- Agriscience Education (<http://education.auburn.edu/programs/cag>)- MEd/MS, EdS (alternative and traditional MEd; distance options for MEd and EdS; PhD available in career and technical education)
- Business/Marketing Education (<http://education.auburn.edu/programs/cbm>) - MEd/MS, EdS (alternative and traditional MEd; distance options for MEd and EdS; PhD available in career and technical education)
- Career and Technical Education (<http://education.auburn.edu/programs/ctc>) – PhD
- Early Childhood Education – MEd/MS, EdS, PhD (traditional MEd only)
- Elementary Education (<http://education.auburn.edu/programs/cee>) – MEd/MS, EdS, PhD (traditional MEd only; distance option for MEd)
- English for Speakers of Other Languages (<http://education.auburn.edu/programs/ces>) – MEd (traditional only; majority of courses offered distance)
- English Language Arts Education (<http://www.education.auburn.edu/programs/ceg>) – MEd/MS, EdS, PhD (alternative and traditional MEd)
- Foreign Language Education: French (<http://education.auburn.edu/programs/cfr>) or Spanish (<http://education.auburn.edu/programs/csn>) - MEd/MS, EdS; (alternative and traditional MEd; distance options for MEd and EdS; EdS in French does not lead to specialist level certification)
- Mathematics Education (<http://education.auburn.edu/programs/cma>) - MEd/MS, EdS, PhD (alternative and traditional MEd)
- Music Education: Instrumental (<http://education.auburn.edu/programs/cmi>) or Vocal (<http://education.auburn.edu/programs/cmv>) - MEd, EdS, PhD (traditional MEd only; distance options for MEd and EdS; EdS does not lead to specialist level certification)
- Reading Education (<http://education.auburn.edu/programs/cnr>) – MEd/MS, PhD
- Science Education: General Science (<http://education.auburn.edu/programs/csi>), Biology (<http://education.auburn.edu/programs/cbi>), Chemistry (<http://education.auburn.edu/programs/cch>), or Physics (<http://education.auburn.edu/programs/cph>) – MEd/MS, EdS, PhD (alternative and traditional MEd)
- Social Science Education: General Social Science (<http://education.auburn.edu/programs/cst>) or History (<http://education.auburn.edu/programs/chy>) – MEd/MS, EdS, PhD (traditional MEd only)

Graduate Certificates

- Teaching English as a Second Language (TESL)/Teaching English as a Foreign Language (TEFL) (http://education.auburn.edu/programs/certs_minors/tesf.html)
- Adult Education and English Language Teaching (http://education.auburn.edu/programs/certs_minors/adel.html)

Economics - MS

The Department of Economics offers the Master of Science in Economics and a PhD track that is described elsewhere. The MS is an academic degree preparing students for careers in business, government, and academia.

More information about the MS in Economics is available at <http://www.cla.auburn.edu/economics/>.

Admission Requirements for the MS in Economics

Applicants for the MS in Economics must have a bachelor's degree or its equivalent from an accredited college or university. A minimum of 18 semester hours of economics and the completion of a calculus sequence are also needed to enter the program. The General Test of the GRE is required. A minimum score of 153 (or 500 on the old GRE scale) on the Verbal GRE portion and a minimum score of 148 (or 600 on the old GRE scale) on the Quantitative GRE portion are required. The graduate committee will evaluate applicants based on their undergraduate records, GRE scores, and letters of recommendation.

Applicants should ensure that the following materials are submitted to the Graduate School web application at <http://www.grad.auburn.edu/>:

- Official scores from the General Test of the GRE
- Official transcripts from every undergraduate institution attended
- Official TOEFL scores for international students

They should ensure that the following materials are submitted to the graduate program officer in the Department of Economics:

- Three letters of recommendation
- Statement of purpose

For applicants to be given full consideration for financial support, a completed application and supporting documents should be received by March 1. Admission and funding decisions will begin shortly thereafter. Later applications will be considered, but decisions will be contingent upon availability.

Graduation Requirements

Students must complete a total of 30 credit hours of course work, including required courses and electives, and comprehensive examinations. No thesis is required for the MS.

Core Curriculum

Fall	Hours	Spring	Hours
ECON 7110 Microeconomics I	3	ECON 7120 Microeconomics II	3
ECON 7130 Mathematical Economics	3	ECON 7220 Macroeconomics II	3
ECON 7210 Macroeconomics I	3	ECON 7330 Microeconometrics	3
ECON 7310 Econometrics I	3	ECON 7340 Macroeconometrics	3

Electives

Students must take 6 hours of electives at the 6000-level or above in consultation with the director of graduate studies.

Comprehensive Examinations

Students must achieve satisfactory (MS-level) performance on comprehensive examinations in microeconomics, macroeconomics, and econometrics. Only one retake is permitted on each exam.

Financial Aid

Financial aid, usually in the form of graduate teaching assistantships is available on a competitive basis for PhD students in good academic standing. Funding normally consists of a tuition waiver and monthly stipend.

Economics - PhD (Forestry)

PhD in Applied Economics is administered jointly by the Department of Economics, the Department of Agricultural Economics and Rural Sociology, and the School of Forestry and Wildlife Sciences. Forestry students in this program will take core courses in microeconomics, macroeconomics, and econometrics in the Department of Economics and pass written preliminary exams given there. An additional oral examination is required in the SFWS for admission to candidacy. The minimum number of hours in this doctoral program is 60 semester hours earned through instruction beyond the bachelor's degree, including 1) a minimum of 30 semester hours graded (e.g. A, B) graduate course work (7000-level and above); and 2) a minimum of 30 semester hours of additional graduate course work (6000-level and above) that may include ungraded courses, 7990 and 8990 and must include at least 10 hours of 8990. As with all other PhD students in the SFWS, students are required to take Research Methods (FORY 7510), Seminar (FOWS 7950), and Practicum for College Teaching (FORY 7910). Dissertation work under this degree program generally involves in-depth economic analysis of a forestry/natural resources/environment issue or problem.

Economics - PhD Track

The PhD in Applied Economics is offered jointly by the Department of Economics, the Department of Agricultural Economics and Rural Sociology, and the School of Forestry and Wildlife Sciences. The PhD track described below is offered in the Department of Economics, which also offers an MS in Economics described elsewhere.

More information about the PhD track offered in the Department of Economics is available at <http://www.cla.auburn.edu/economics/>.

Information about the PhD track offered in the Department of Agriculture Economics and Rural Sociology is available at <http://www.ag.auburn.edu/agec/grad/>.

Information about the PhD track offered in the School of Forestry and Wildlife Sciences is available at <https://sites.auburn.edu/academic/sfws/newstudents/Pages/GraduateDegrees.aspx>.

Admission Requirements

Applicants for the PhD track in Applied Economics offered through the Department of Economics must have a bachelor's degree or its equivalent from an accredited college or university. A minimum of 18 semester hours of economics and the completion of a calculus sequence are also needed to enter the program. The General Test of the GRE is required. A minimum score of 153 (or 500 on the old GRE scale) on the Verbal GRE portion and a minimum score of 148 (or 600 on the old GRE scale) on the Quantitative GRE portion are required. The graduate committee will evaluate applicants based on their undergraduate records, GRE scores, and letters of recommendation.

Applicants should ensure that the following materials are submitted to the Graduate School web application at <http://www.grad.auburn.edu/>:

- Official scores from the General Test of the GRE
- Official transcripts from every undergraduate institution attended
- Official TOEFL scores for international students

They should ensure that the following materials are submitted to the graduate program officer in the Department of Economics:

- Three letters of recommendation
- Statement of purpose

For applicants to be given full consideration for financial support, a completed application and supporting documents should be received by March 1. Admission and funding decisions will begin shortly thereafter. Later applications will be considered, but decisions will be contingent upon availability.

Graduation Requirements

Students must complete a minimum of 60 semester hours of course work at the 7000-level or above. Any course work outside of the Department of Economics must be approved by the director of graduate studies. As part of their 60 credit hours, students complete the required courses listed below. They must also pass comprehensive exams in three areas and complete course work in two advanced fields. Finally, students must write and successfully defend a dissertation.

Core Curriculum

Fall	Hours	Spring	Hours
ECON 7110 (https://nextbulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/economicsms_major) Microeconomics I	3	ECON 7120 (https://nextbulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/economicsms_major) Microeconomics II	3
ECON 7130 (https://nextbulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/economicsms_major) Mathematical Economics	3	ECON 7220 (https://nextbulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/economicsms_major) Macroeconomics II	3
ECON 7210 (https://nextbulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/economicsms_major) Macroeconomics I	3	ECON 7330 (https://nextbulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/economicsms_major) Microeconometrics	3
ECON 7310 (https://nextbulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/economicsms_major) Econometrics I	3	ECON 7340 (https://nextbulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/economicsms_major) Macroeconometrics	3

Comprehensive Examination

Students must achieve satisfactory (PhD-level) performance on comprehensive examinations in microeconomics, macroeconomics, and econometrics. Only one retake is permitted on each exam.

Completion of Two Advanced Fields

Students must complete the coursework and pass a written examination in two advanced fields. Field course work consists of a minimum two-course sequence and must be approved in advance by the director of graduate studies.

Candidacy

A student will be admitted to candidacy after completing two advanced fields, forming a dissertation committee, and successfully completing a dissertation proposal.

Dissertation and Oral Defense

Students must write a dissertation and pass an oral defense. Students must register for at least 10 semester hours of dissertation research (ECON 8990 (https://nextbulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/economicsms_major) Research and Dissertation).

Financial Aid

Financial aid, usually in the form of graduate teaching assistantships, is available on a competitive basis for PhD students in good academic standing. Funding normally consists of a tuition waiver and monthly stipend.

Educational Foundations, Leadership and Technology - MEd, MS, EdS, PhD

The Department of Educational Foundations, Leadership and Technology offers degree programs including state certifications, graduate certificates, and a minor. Degree programs lead to a master of education (non-thesis option), master of science (thesis option), specialist in education, or doctor of philosophy. Graduate degrees are available in the areas of administration of elementary and secondary education, administration of higher education, administration of supervision and curriculum, adult education, educational psychology and library media. The graduate state certification programs in administration of elementary and secondary education (instructional leadership) and library media are approved by the Alabama State Board of Education. The College of Education is accredited by the National Council for Accreditation of Teacher Education (NCATE). Graduate certificates are offered in adult education and English language teaching, college/university teaching, extension educator, and program evaluation. A minor is offered in sport management.

Applicants to the department's graduate programs must satisfy the Graduate School's admission requirements. Departmental admission requirements include a degree from an accredited college or university, competitive Graduate Record Examination (GRE) or Miller Analogies Test (MAT) scores, a GPA of at least a 2.75 on undergraduate coursework, a statement of intent, three recommendations, and any remaining admission requirements as identified by the program or department.

Master's Degree Programs (MEd/MS)

Master's degree programs are offered in administration of elementary and secondary education, administration of higher education, administration of supervision and curriculum, adult education, and library media. All programs require a minimum of 30 semester hours, an internship and/or practicum, and a comprehensive examination.

Master's level certification programs include instructional leadership (MEd in administration of elementary and secondary education) and library media. Admission requirements established by the Alabama State Board of Education, including those pertaining to a clear background check, prior certification, and teaching experience must be satisfied prior to admission to one of these programs. Degree requirements for both programs are in compliance with State regulations. Graduation requirements include a passing score on the Alabama Prospective Teacher Testing Program's appropriate Praxis II subject assessment.

Specialist in Education Degree Programs (EdS)

EdS programs are offered in administration of elementary and secondary education, adult education, and library media. All programs require a minimum of 30 semester hours, a directed field project, and a comprehensive examination.

Specialist level certification programs include instructional leadership (EdS in administration of elementary and secondary education) and library media. Admission requirements established by the Alabama State Board of Education, including those pertaining to a clear background check, prior certification, and teaching experience must be satisfied prior to admission to one of these programs. Degree requirements for both programs are in compliance with State regulations.

Master's and Specialist Level Certification

Individuals completing State-approved master's level certification programs are eligible to apply for Alabama Class A certification; individuals completing State-approved specialist level certification programs are eligible to apply for Alabama Class AA certification. Individuals seeking certification in states other than Alabama are responsible for contacting those state certification offices to obtain their application form and requirements. The State of Alabama signs the National Association of State Directors of Education and Certification (NASDTEC) Interstate Agreement which facilitates the applications of program graduates when they apply for certification in other states.

Doctor of Philosophy Degree Programs (PhD)

PhD programs require a minimum of 87 semester hours beyond the bachelor's degree. Research methods, statistics, and foundations of education are components of all doctoral programs. The department offers a doctorate in the areas of administration of elementary and secondary education, administration of higher education, administration of supervision and curriculum, adult education, and educational psychology. After satisfactory completion of coursework and a general written and oral examination, the student advances to candidacy. Doctoral students must register for at least 10 hours of dissertation credit while completing a dissertation.

Minor and Graduate Certificates

The Department of Educational Foundations, Leadership and Technology offers a minor in sports management and graduate certificates in college/university teaching, extension educator, and program evaluation. In addition, the Department in collaboration with the Department of Curriculum and Teaching offers a graduate certificate in adult education and English language teaching.

Additional Information

Detailed admission and program requirements for the department's multiple areas of graduate study can be accessed at Academic Programs (<http://www.education.auburn.edu/programs/degreeoption.html>) on the College of Education's website.

Degree Programs

- Administration of Elementary and Secondary Education (<http://education.auburn.edu/programs/aes>) [certification in instructional leadership]—MEd, EdS, PhD
- Administration of Higher Education (<http://education.auburn.edu/programs/ahe>) – MEd, PhD
- Administration of Supervision and Curriculum (<http://education.auburn.edu/programs/asc>) – MEd, PhD
- Adult Education (<http://education.auburn.edu/programs/ade>) - MEd/MS, EdS, PhD
- Educational Psychology (<http://education.auburn.edu/programs/epg>) (option within PhD in Counseling Psychology) – PhD
- Library Media (<http://education.auburn.edu/programs/mse>) – MEd, EdS

Graduate Certificates

- Adult Education and English Language Teaching (http://education.auburn.edu/programs/certs_minors/adel.html)
- College/University Teaching (http://education.auburn.edu/programs/certs_minors/cgtc.html)
- Extension Educator (http://education.auburn.edu/programs/certs_minors/eedu.html)
- Program Evaluation (http://education.auburn.edu/programs/certs_minors/pegv.html)

Minor

- Sport Management (http://education.auburn.edu/programs/certs_minors/spmn.html)

The University schedule of courses (https://ssbprod.auburn.edu/pls/PROD/bwckschd.p_disp_dyn_sched) is available on the Auburn University Website.

Electrical and Computer Engineering - MEE, MS, PhD

Electrical and Computer Engineering (ECE) offers graduate programs of instruction and research leading to master and doctoral degrees. Instruction is offered and research facilities are available to support graduate study in control systems & robotics, digital signal processing and communications, wireless engineering, electromagnetics modeling and analysis, microelectronics & microelectromechanical systems (MEMS), magnetic resonance imaging (MRI), power systems, digital systems, and computer engineering. Additionally, individualized programs that cross the traditional boundaries of engineering, mathematics and the sciences can be accommodated.

For admission at the master's level, the applicant must hold a bachelor's degree or its equivalent from an institution of recognized standing. Master's degree programs are available to graduates of engineering curricula and, in cases of exceptional academic credentials, to graduates of mathematics and science curricula.

An applicant for admission to the PhD program must hold a master's degree, or have taken a minimum of one academic year of graduate study, from an institution of recognized standing in an area of study related to the proposed doctoral work. An applicant who holds a bachelor's degree in electrical or computer engineering and has exceptional academic credentials may apply for direct admission to the PhD program.

All applicants must submit Graduate Record Examination scores for the General Test, three recommendation letters, a statement of purpose, and a resume. International applicants must also submit scores for either the TOEFL or IELTS exam.

Applications for admission are reviewed by the departmental graduate faculty. Decisions are based upon the applicant's potential for success in advanced-level study as indicated by letters of reference, GRE scores and previous academic achievement.

The MS degree program of study (the thesis option) requires a minimum of 30 semester hours of work, including 4 to 6 semester hours of research and thesis. MS students must spend at least one semester of full-time study in residence. The MEE degree program (the non-thesis option) requires 33 semester hours of work, including a 3 semester hour project. Both masters programs must include courses in at least three of the major research areas in ECE, no more than 3 semester hours of independent study, and a final examination on either the thesis or the non-thesis project.

Students admitted to the doctoral program will take a written qualifying examination soon after entering, covering fundamental undergraduate material in ECE. Additional examinations are given throughout the program. The program generally consists of a minimum of 60 semester hours of course work beyond the bachelor's level, including at least 10 hours of research and dissertation. A minor of at least 9 semester hours in a closely related field outside of the major area of study, either within or outside of ECE, is required.

English - MA, MTPC, PhD, Graduate Certificate

- MA
- MTPC
- PhD
- Graduate Certificate

The Department of English offers programs leading to the Master of Arts (MA), the Master of Technical and Professional Communication (MTPC), and the PhD. These graduate programs prepare students for careers in teaching and research, writing, editing, business, and other professions seeking broadly educated individuals skilled in analysis and communication. In addition, individuals holding a teaching certificate may, with an additional graduate course in Communication, earn Alabama Class A or AA certification under a state-approved Strengthened Subject Matter Option program in English/Language Arts. The Department of English also offers the Graduate Certificate in Technical Communication (GCTC).

More information about the MA in English is available at <http://www.cla.auburn.edu/english/graduate-studies/ma/>.

More information about the MTPC is available at <http://www.cla.auburn.edu/mtpc/>.

More information about the PhD in English is available at <http://www.cla.auburn.edu/english/graduate-studies/phd/>.

More information about the Graduate Certificate in Technical Communication is available at <http://www.cla.auburn.edu/mtpc/prospective-students/programs-of-study/graduate-certificate/>.

Master of Arts

Admission Requirements

For admission to the MA program, the student must normally have a bachelor's degree from an accredited institution with the equivalent of 24 semester hours of credit in upper-division English courses and satisfactory scores on the General Test of the GRE. Applicants lacking the required undergraduate courses must typically make up these deficiencies before they can be admitted to the degree program.

Applicants should ensure that the following materials are submitted to the Graduate School web application:

- Official transcripts from every undergraduate institution attended
- Official scores from the General Test of the GRE

They should submit the following to the Department of English:

- Writing sample
- Statement of purpose
- Three confidential letters of recommendation that speak to the applicant's potential for successful graduate study

Application materials are due by January 15.

Options and Course Requirements

For the MA, students may select one of the following three tracks: literature, composition and rhetoric, or creative writing. Each track requires a minimum of 30 credit hours of coursework.

The literature track requires the following:

- Three major area courses (one pre-1800 literature, one post-1800 literature, one literary theory)
- One comparative literature, genre, or author-based course
- One technology and culture, globalism, sustainability, or diversity course
- One course in technical and professional communication, rhetoric and composition, linguistics, or creative writing
- Two elective courses in English (one of which must be ENGL 7040 English Composition: Issues and Approaches for all graduate teaching assistants)
- Two courses in a coordinated minor, chosen from courses in English or another discipline relevant to the student's professional and academic goals

The creative writing track requires the following:

- Three major area courses (ENGL 7130 Fiction Writing and ENGL 7140 Poetry Writing, with one repeated for a total of three creative writing courses)
- One pre-1800 literature course
- One technical and professional communication, rhetoric and composition, or linguistics course
- One technology and culture, globalism, sustainability, or diversity course
- Two courses in a coordinated minor, chosen from courses in English or another discipline relevant to the student's professional and academic goals
- Two elective courses in English (one of which must be ENGL 7040 English Composition: Issues and Approaches for all graduate teaching assistants)

The composition and rhetoric track requires the following:

- Three major area courses (ENGL 7040 English Composition: Issues and Approaches, ENGL 7050 Studies in Composition, and ENGL 7300 Rhetoric Theory and Practice)
- One course in technical and professional communication or linguistics
- One literature or creative writing course
- One technology and culture, globalism, sustainability, or diversity course
- Two courses in a coordinated minor, chosen from courses in English or another discipline relevant to the student's professional and academic goals
- Two elective courses in English

Other Graduation Requirements

In addition to completing the required course work, students must successfully complete a portfolio and pass an oral examination based on the portfolio. They also must demonstrate reading knowledge of one foreign language.

Master of Technical and Professional Communication

Admission Requirements

For admission to the MTPC program, students must have a bachelor's degree from an accredited institution, satisfactory scores on the General Test of the GRE, and excellent writing skills. Undergraduate course work in English is not required.

Applicants should ensure that the following materials are submitted to the Graduate School web application:

- Official transcripts from every undergraduate institution attended, including high school transcripts in the case of AP classes
- Official scores from the General Test of the GRE

They should submit the following to the Department of English:

- A sample of professional or scholarly writing (e.g., a technical manual, a business report, a research essay)
- A statement of purpose explaining their interest in the program
- Three letters of recommendation. At least two of the letters should come from professors or instructors; the other letter may come from an academic adviser, an employer, or some other person who can speak to their potential for success in the MTPC program.

Application materials should be received by February 15.

Course Requirements

The MTPC requires a minimum of 30 credit hours, consisting of the following:

- Four required courses (ENGL 6000 Technical and Professional Editing, ENGL 6010 Document Design in Technical and Professional Communication, ENGL 7010 Technical and Professional Communication: Issues and Approaches, and ENGL 7060 Web Development)
- 9 hours of elective courses in English approved by the student's advisory committee
- 9 hours in a coordinated minor or 9 additional hours of course work in technical and professional communication, rhetoric and composition, or linguistics approved by the student's advisory committee.

Other Graduation Requirements

Students must compile a portfolio of work accepted by the student's advisory committee, make a formal presentation about the portfolio, and pass an oral examination.

PhD

Admission Requirements

For admission to the PhD program, the student must normally have a master's degree in English and satisfactory scores on both the General Test and the Subject Test of the GRE.

Applicants should ensure that the following materials are submitted to the Graduate School web application:

- Official transcripts from every undergraduate and graduate institution attended
- Official scores from the General Test and the Subject Test of the GRE

They should submit the following to the Department of English:

- Sample of scholarly writing
- Statement of purpose
- Three confidential letters of recommendation that speak to the applicant's potential for successful graduate study

Application materials are due by January 15.

Concentrations and Course Requirements

The PhD requires a minimum of 60 credit hours beyond the BA, including 10 hours of dissertation credit. Students entering our program with an MA in English from Auburn or from another institution transfer in their course work; in consultation with their graduate advisory committee, students then select additional courses. Students may choose to pursue either a concentration in literature or a concentration in composition and rhetoric.

Other Graduation Requirements

After completing course work, students must take general doctoral examinations, both written and oral, over three related areas. These areas might include a literary period, a genre, an issue in composition or rhetorical studies, language and linguistics, or literary and cultural theory. After passing these examinations, students advance to doctoral candidacy. Within three months after advancing to doctoral candidacy, students must submit an approved dissertation prospectus to the director of graduate studies. Students must write and defend a dissertation.

Doctoral students must demonstrate a reading knowledge of two foreign languages or advanced proficiency in one foreign language.

Graduate Certificate in Technical Communication

Admission Requirements

For admission to the Graduate Certificate in Technical Communication, students must have a bachelor's degree from an accredited institution and excellent writing skills.

Applicants should ensure that the following materials are submitted to the Graduate School web application:

- Official transcripts from every undergraduate institution attended

They should submit the following to the Department of English:

- A sample of professional or scholarly writing (e.g., a technical manual, a business report, a research essay)
- A statement of purpose explaining their interest in the program
- Three letters of recommendation from professors, academic advisers, employers, or others who can speak to their potential for success in the GCTC program

GCTC Course Requirements

The GCTC is a non-degree program, requiring 12 hours of coursework as follows:

ENGL 6000	Technical and Professional Editing	3
ENGL 6010	Document Design in Technical and Professional Communication	3
ENGL 7010	Technical and Professional Communication: Issues and Approaches	3
Elective in Technical and Professional Communication		3

Financial Aid

The department offers financial aid in two forms: fellowships and assistantships. Graduate teaching assistantships or graduate assistantships are often available for the most qualified students, except those enrolled in the GCTC. Assistantships are renewable, provided that students perform satisfactorily and make adequate progress toward the degree. A few outstanding applicants also receive first-year or second-year fellowships. Review of applications for financial aid will begin on January 15 for the MA and PhD and February 15 for the MTPC.

Entomology - MS, MAg, PhD

The Department of Entomology and Plant Pathology offers entomology degrees including a of Master of Science (MS), Master of Agriculture (MAg) and Doctor of Philosophy (PhD). The Graduate program emphasizes basic and applied aspects of the science of entomology preparing students for careers in teaching, research and extension with a variety of academic, governmental, state, private and industrial opportunities. The educational goals and objectives of the MS degree program are to produce graduates who are fundamentally trained in the scientific principles and general knowledge of entomology and related sciences and who are able to apply these principles to successfully solve problems of an entomological nature or employ this knowledge at an advanced level of study. The purpose of the PhD program in entomology is to produce graduates who are fundamentally trained in the scientific principles and general knowledge of entomology and related sciences and who are able to employ this knowledge at the advanced level of study and/or apply these principles to solve problems of an entomological nature.

Admission is based primarily on a combination of GPA and Graduate Record Examination (GRE) scores and (if an international student) TOEFL tests are also required.

Students holding baccalaureate degrees in agriculture or the biological sciences may find this degree program helpful to their professional development and career goals. For a major in entomology at the MS level, the student should have a baccalaureate degree from a recognized institution with pre-requisite training in zoology, botany, chemistry, physics, and mathematics. Qualified students lacking mandatory courses may be admitted but will be required by the student's advisory committee to make up any deficiencies.

The MS program in entomology is available to qualified individuals who wish to pursue a master's level program that requires a thesis. Importance is placed on both classroom and research training. The MS requires a minimum of 30 semester hours, including:

ENTM 7200	Insect Physiology	4
ENTM 6440	Insect Morphology	5
ENTM 6300	Systematic Entomology	5
ENTM 7950	Seminar	1

Thesis

A graduate-level course in statistics is also required. A minimum of 21 semester hours must be taken in entomology and a specialty area of at least 10 semester hours may be selected from related subject matter fields. There is no language requirement for the MS degree.

The master of agriculture (MAg) program with a specialization in entomology is available to qualified applicants who wish to pursue a master's level program that does not require a thesis. The MAg with a specialization in entomology carries the same entrance requirements as the MS but is a non-thesis degree. The MAg requires a minimum of 32 semester hours, 21 of which must be in entomology, including:

ENTM 7200	Insect Physiology	4
ENTM 6440	Insect Morphology	5
ENTM 6300	Systematic Entomology	5
ENTM 6920	Internship (strongly recommended)	3

Course in Statistics (strongly recommended)

The remaining courses can be taken from a variety of subject areas determined in consultation with the student's advisory committee. A comprehensive examination is required after all courses are completed. There is no language requirement for the MAg degree.

The PhD program requires 60 semester hours of course work, including:

ENTM 7200	Insect Physiology	4
ENTM 6440	Insect Morphology	5
ENTM 6300	Systematic Entomology	5
ENTM 8950	Seminar	1

Dissertation based on the student's original research

A graduate-level course in statistics is also required. Of the 60 semester hours, 30 must be graded graduate courses 6000 and above while registered in the PhD program. There is no language requirement for the PhD. Upon completion of the course work, PhD students must take a general written examination. Students must pass all parts of the written examination before scheduling the preliminary oral examinations (prelim). After satisfactory completing the prelim the student advances to candidacy. The PhD student will conduct independent research and prepare a dissertation. After completion of the dissertation the student must pass a final oral examination defending the dissertation.

Finance - MSBA

The MSBA program offers specialized training to graduate students desiring a more intense background in the field relative to the general preparation provided by an MBA. The objective of the program is to prepare students for careers in their chosen profession or for further graduate work. The program has a thesis and non-thesis option (the non-thesis option requires additional course work). The program of study is determined by the student and the student's advisory committee based on the student's background and areas of interest.

Information concerning specific program requirements may be obtained by visiting www.business.auburn.edu.

Fisheries and Allied Aquacultures - MAq, MS, PhD

The FAA graduate program prepares students for productive careers in academia and the private and public sectors in aquaculture, aquatic resource management and ecology, and fisheries biology and management. The Department offers graduate programs leading to the Master of Science (MS), Master of Aquaculture (MAq), and Doctor of Philosophy (PhD) degrees.

Students desiring admission for graduate study should have a degree from a recognized academic institution, adequate course work in biology, zoology, botany, chemistry, physics, and mathematics and submit GRE scores. Qualified students lacking an adequate background in these areas may be admitted but may be required to correct deficiencies after they enroll at Auburn. Applicants must also meet minimum requirements of the Graduate School including English language requirements. Evaluation of applicants includes academic records, GPA, GRE scores, letters of recommendation, and past professional history.

The MAq is a non-thesis degree that prepares a student for a career in aquaculture management or extension. The degree requires successful completion of a minimum of 40 semester hours beyond the bachelors' degree and includes a 3 to 5 - month internship. Included in the 40 hours are:

FISH 6210	Principles of Aquaculture	3
FISH 6220	Water Science	3
FISH 6240	Hatchery Management	4
FISH 6250	Aquaculture Production	4
FISH 6410	Introduction to Fish Health	3
FISH 7640	Fish Nutrition	3
Business-related courses		6-12

In addition, students must pass a comprehensive oral examination after completion of all course work and internship.

The Master of Science degree prepares the student for aquatic resource or aquaculture related careers as well as further studies toward a PhD degree. A minimum of 30 semester hours of 6000-level or above is required. A minimum of 21 semester hours (which includes FISH 7990) of 6000-level and above courses must be taken within the major area of concentration and at least an additional 9 hours taken in a separate but closely related area of concentration. A minimum of 4 semester hours of FISH 7990 (Research and Thesis) is required but no more than 6 semester hours may be counted toward the degree. In addition to the required course work, the student must complete research and a written thesis and pass a comprehensive examination on research and course work as defined by the student's advisory committee.

Admission to the Doctor of Philosophy degree program usually requires that the student has a master's degree from a recognized graduate program. The doctoral program emphasizes original scholarly research and includes significant advanced coursework. The PhD degree requires a minimum of 60 semester credit hours beyond the bachelor's degree, of which a minimum of 31 hours must be taken through Auburn University, and a dissertation describing original research. A minimum of 30 hours must be graded graduate courses. The minimum and maximum number of hours of dissertation research (FISH 8990) is 10. Students must pass a general examination, often called the "preliminary examination," typically taken after all graded course work is completed, to become a PhD candidate. The exam includes a written exam followed by an oral exam. The student becomes a **candidate** for the degree on successful completion of the general examination. After completion of the dissertation, the student must pass a final oral examination defending the dissertation.

All graduate students are expected to be engaged in service to the department's research and education programs as deemed appropriate by the academic adviser and department head. All students receiving departmental assistantships must be registered for at least one course (any course of at least 1 credit hour carrying an Auburn University course number) during each academic term of the assistantship. International students must meet visa requirements for coursework load. All graduate students must present an exit seminar in the department for which credit will be given as either FISH 7950 for master's or FISH 8950 for PhD's.

Food Science - MAg, MS, PhD

A graduate degree option in Food Science is offered through the Department of Poultry Science. Students pursuing graduate studies in Food Science can earn Master of Agriculture, Master of Science, and Doctor of Philosophy degrees. These degrees are designed

to prepare outstanding students for careers in the food industry, government, and academia. Research training and experience can be acquired in the specialized areas of food safety/microbiology, food quality, food chemistry, or processing and product technology.

Applicants apply through the Department of Poultry Science and must indicate their desire to pursue graduate studies in Food Science. All applications are reviewed by the departmental Graduate Committee. Application materials include: official copies of all college transcripts, GRE scores, TOEFL scores (for international students), 3 letters of recommendation, a resume, and a statement of purpose. To pursue MS or MAg degrees in food science, applicants must have a bachelor's degree in food science, nutrition, chemistry, biology, food engineering, or allied sciences from a recognized institution. A MS degree in a relevant field is required to be considered for admission into the PhD program. The course of study, developed by the student and the advisory committee, may include additional courses to address specific needs or course work deficiencies.

Additional information about requirements, policies, and availability of financial support can be obtained from the graduate program officer for the Food Science Option in Poultry Science (bellleo@auburn.edu).

MS/MAg Degree Requirements

1. The Master of Science (MS degree) requires a research project with a formal written thesis while the Master of Agriculture (MAg) requires a research project with written report. The MS degree requires a minimum of 30 semester credit hours. The MAg degree requires 33 semester credit hours. Both MS and MAg degrees require a comprehensive final oral examination.
2. The Food Science Core Curriculum –

FDSC 6430	Food Chemistry	4
POUL 6160	Advanced Principles of Food Safety	3
STAT 7000	Experimental Statistics I	4
POUL 7950	Graduate Seminar	1
FDSC 7980	Nonthesis Research (4 cr)	1-4
or FDSC 7990	Research And Thesis	
3. Food Science Electives – MS students must take 4 food science electives chosen in consultation with the major professor and advisory committee. MAg students must take 5 food science electives. Free electives may be used to acquire the required 30 semester hours (MS) or 33 semester hours (MAg).

PhD Degree Requirements

1. For the PhD degree, a minimum of 30 semester hours of graduate coursework beyond the MS (60 hours beyond the bachelor's degree) is required.
2. The Food Science Core Curriculum –

FDSC 6430	Food Chemistry	4
POUL 6160	Advanced Principles of Food Safety	3
STAT 7000	Experimental Statistics I	4
POUL 7950	Graduate Seminar (taken twice)	1
STAT 7010	Experimental Statistics II	3
FDSC 8990	Research and Dissertation (10 hours)	1-10
3. Food Science Electives – PhD students must take 5 food science electives chosen in consultation with the major professor and advisory committee. Free electives may be used to acquire the required 60 semester hours.
4. Examinations – Upon completion of course work, students must pass general written examinations administered by the advisory committee, followed by a comprehensive preliminary oral examination. After satisfactory completion of these exams, the student advances to candidacy. A dissertation based on an independent research project is required to earn a PhD degree. After completion of the dissertation, the student must pass a final Doctoral oral examination defending the dissertation.

Forestry - MNR, MS, PhD

Graduate study in forestry leads to the Master of Natural Resources (MNR), Master of Science (MS), or Doctor of Philosophy (PhD) degrees. In addition to meeting Graduate School admission requirements, applicants are evaluated and recommended for admission by the graduate faculty of the School of Forestry and Wildlife Sciences based on an examination of their scores on the Graduate Record Examination (GRE), TOEFL tests for international students, their previous academic record, experience, and recommendations.

While exceptions may be made, the faculty generally expect a minimum GPA of 3.0 in previous academic course work and minimum scores both verbal and quantitative in the 50 percentile range for the GRE. Course deficiencies are identified by the student's advisory committee and approved by the GPO with due consideration for the student's previous training and experience.

Degrees offered:

- **Master of Natural Resources** - Three **MNR** options are available.

Natural Resource Management option is available for individuals with a biologically related baccalaureate degree who are interested in careers in the management and policy making for our natural resources. This option can be completed in 3-4 semesters depending upon coursework selected and requires a minimum of 36 semester hours of graduate courses.

Advanced Forestry Studies for students with undergraduate degrees in forestry. It will also involve primarily advanced course work and can be completed in 3-4 semesters. This option requires a minimum of 36 semester hours of graduate courses.

Professional Forester option for individuals with baccalaureate degrees in fields other than forestry and who are interested in becoming Registered Foresters in Alabama. This option is a two-year program which begins with a 10 week summer Field Practicum and requires a minimum of 70 semester hours (34 hours of specified undergraduate course work plus 36 hours of graduate course work).

- Requirements for all three MNR options include a MNR paper (FOR 7980), Graduate Seminar FOWS 7950), and assistance with one course during their degree in Practicum for College Teaching (FOR 7910). All MNR students are required to pass a comprehensive oral examination conducted by their Graduate Committee.
- **Master of Science (MS)** A research proposal and thesis based on original research are major components of the MS degree. The program normally requires 2 – 3 years for completion, and can be tailored for students with interests in forest management, ecology and environmental sciences, economics, engineering, or business. The MS degree program requires a minimum of 30 hours beyond the bachelor degree at the graduate level, 21 hours of which must be in the major. A minimum of 4 but not more than 6 hours in Research and Thesis (FOR 7990) is required. All MS students are required to take Research Methods (FOR 7510), Seminar (FOWS 7950), and assist with one course during their degree in Practicum for College Teaching (FOR 7910).
- **Doctor of Philosophy (PhD)** may be tailored for any of the topical areas listed under the M.S. A research proposal and dissertation based on original research are required as major components of the PhD degree program. The degree requires 60 semester hours beyond the bachelor degree. There must be a minimum of 30 semester hours in graded coursework at the 7000-level or above. Of the remaining 30 semester hours, 10 hours must be Research and Dissertation (FOR 8990) and 20 hours of 6000-level or above. While some of these 60 hours can be from previous graduate work, such as a MS degree, a minimum of 25 hours of graded coursework at the 6000-level or above must be completed at Auburn. All PhD students are required to take Research Methods (FOR 7510), Seminar (FOWS 7950), and Practicum for College Teaching (FOR 7910). Oral and written preliminary exams are required for advancement to candidacy; The preliminary exams must be completed no less than two academic terms prior to graduation. The written and oral preliminary examinations for PhD students will normally consist of questions from each committee member regarding technical competency and other related issues.

An urban forestry minor, administered in cooperation with the Department of Horticulture, is available for **MNR**, **MS**, and **PhD** degrees.

Geography - MS

Graduate study in geography is directed toward the master of science degree. The MS degree provides an advanced understanding of key geographical concepts of space, scale, and distance in human and physical processes along with training in advanced geospatial analysis in preparation for employment in industry and government or further academic pursuits. The curriculum is oriented toward a broad applied geographic training with opportunity for specialization through electives, directed studies, and thesis or capstone research.

Admission into the master's program requires a bachelor's degree in geography or related discipline from an accredited institution, an acceptable undergraduate GPA, satisfactory scores on the Graduate Record Examination general test, and three letters of recommendation. Undergraduate course deficiencies may be required and can be made up during the student's first year in the degree program.

The thesis option MS degree requires a minimum of 30 semester hours and the successful completion of a thesis. The 30 hours include:

GEOG 6800	Geographic Thought	3
GEOG 6700	Quant Meth & Spatial Analysis	3
Graduate-level Geography Courses		6
Graduate Level Electives ¹		18
Total Hours		30

¹ 12 hours must come from geography.

The non-thesis option requires a minimum of 39 semester hours and the successful completion of a comprehensive written and oral examination by the faculty committee. The 39 hours include:

GEOG 6800	Geographic Thought	3
GEOG 6700	Quant Meth & Spatial Analysis	3
Graduate Level Electives ¹		33
Total Hours		39

¹ 18 hours must come from geography.

Geology - MS

Graduate study in geology leads to the master of science. The graduate program is oriented toward providing a sound practical background in preparation for employment in industry or government service or further academic pursuits. The curriculum provides broad training in geology with the opportunity for specialization through electives, directed studies, and thesis or capstone research.

Admission into the master's program requires a bachelor's degree in geology (or related Earth science discipline) from an accredited institution with 40 semester hours in geology, an acceptable undergraduate GPA, satisfactory scores on the Graduate Record Examination general test, and three letters of recommendation. Undergraduate course deficiencies may be made up during the student's first year in the degree program.

The thesis option MS degree in geology requires a minimum of 30 semester hours and completion of a thesis. The 30 hours include:

GEOL 7100	Geocommunication	3
Graduate-level Geology Courses		18
Approved 6000- or 7000-level Geology or Supportive Electives ¹		3-5
Thesis		4-6
Total Hours		28-32

¹ No more than 3 hours of which can be GEOL 7930-Directed Study

Students electing the non-thesis option must complete a minimum of 40 semester hours and a capstone project. The 40 hours include:

GEOL 7100	Geocommunication	3
Graduate-level Geology Courses		33
Approved 6000- or 7000-level Geology or Approved Electives ¹		4
Total Hours		40

¹ All or a portion of which may be GEOL 7930-Directed Study or GEOL 7980- Capstone Project.

Both degree options require (1) satisfactory completion of a summer field course or comparable field experience prior to beginning the second year of residence and (2) demonstrated working knowledge of a computer language or computer-based geographic information system (G.I.S.) before graduation.

History - MA, PhD, Graduate Certificates

Graduate study in history leads to the Master of Arts in History and the PhD in History. Additionally, Graduate Certificates in Public History and in Archival Studies are offered. The graduate program prepares students for careers in teaching, public history, archival management, government, and research. More information is available at <http://www.cla.auburn.edu/history/students/graduate-students/>.

MA in History

Admission Requirements

For admission to the MA program, the student must have a bachelor's degree from an accredited institution with 15 semester hours of history and a satisfactory score on the General Test of the GRE. For more information about the Department of History's expectations for admission, see <http://www.cla.auburn.edu/history/students/prospective/graduate-students/admission-requirements/>. Applications must be approved by the department's graduate committee. Applicants lacking course requirements must make up deficiencies before or after admission to the degree program.

Applicants should ensure that these materials are sent to the Graduate School web application:

- Official transcripts from all undergraduate and graduate institutions
- Official scores from the General Test of the GRE sent from ETS

Applicants should ensure that these materials are sent to the director of graduate studies in the Department of History:

- Photocopy of GRE scores.
- Photocopies of transcripts from all undergraduate and graduate institutions
- Three letters of recommendation
- A writing sample
- A statement of purpose
- An application for an assistantship (for those who wish to be considered for funding)

All materials for admission to the MA in History are due on March 15. January 15 is the due date for those wishing to be considered for assistantships.

MA Requirements

The MA requires a minimum of 31 hours and a thesis. Of the 31 hours, 21 must be in seminar courses, including HIST 7700 Seminar in Historical Methods and one research and writing seminar. In addition to possible concentrations in United States history, European history, and the history of technology, the MA program offers specializations in archival studies and public history, including practical training (a 3-hour required internship).

The MA degree (non-thesis) is awarded to students in the doctoral program who have not previously earned the master's upon passing the general examination for admission to candidacy for the PhD.

There is no language requirement for the MA degree.

PhD in History

Admission Requirements

For admission to the PhD program, the student must have a bachelor's degree with 15 semester hours of history and a satisfactory score on the General Test of the GRE. Applications must be approved by the department's graduate committee.

Applicants should ensure that these materials are sent to the Graduate School web application:

- Official transcripts from all undergraduate and graduate institutions
- Official scores from the General Test of the GRE sent from ETS

Applicants should send these materials to the director of graduate studies in the Department of History:

- Photocopy of GRE scores
- Photocopies of transcripts from all undergraduate and graduate institutions

- Three letters of recommendation
- A writing sample
- A statement of purpose
- An application for an assistantship (for those who wish to be considered for funding)

All materials for admission to the PhD in History are due on March 15. January 15 is the due date for those wishing to be considered for assistantships.

PhD Requirements

The program requires a minimum of 65 semester hours beyond the bachelor's degree, written and oral examinations, a dissertation and oral defense, and reading knowledge of at least one foreign language. Of the 65 hours, 43 must be at the 7000- or 8000-level, including at least 3 hours and not more than 6 hours in research seminars. The 43 hours do not include thesis or dissertation credit.

Three courses are required:

- HIST 7700 Seminar in Historical Methods
- HIST 8700 Historiography and Theory of History
- HIST 8710 Introduction to the Teaching of History

Major fields in history include the following:

- United States to 1865
- United States since 1865
- Europe 1500-1815
- Europe since 1789
- History of Technology

In addition to the major field, students must construct two minor fields with a minimum of 9 hours of course work in each, and one breadth field with a minimum of 6 hours of course work. Minor fields and specializations are offered in all of the preceding fields and additionally in Latin American history, world history, public history, archival studies, and other fields as approved by the department graduate committee. Students must have World History as either the breadth field or one of the minor fields. As part of this requirement, they will take at least one seminar that addresses current debates in the field of World History, for example, HIST 7690 Seminar in Modern World History, and one or more additional courses focused on some aspect of non-European, non-United States history. With the approval of the GPO and committee members, a minor field or breadth field may be constructed in a discipline other than history.

To advance to candidacy, students must demonstrate excellence in their major field of history and competence in two minor fields of history on their general examinations through written and oral examinations. These examinations need to be successfully completed no later than six months after students have completed their course work.

Within four months of successful completion of the oral examination, students present to the assembled dissertation committee a dissertation proposal for discussion and approval. Following a successful defense of the proposal, doctoral candidates have four years to present the written dissertation and defend it in an oral examination before their major professor and advisory committee. If the oral examination is judged unsatisfactory or not submitted in a timely manner, the general rules of the Graduate School on retests and extension will apply.

The PhD requires a reading knowledge of at least one foreign language as determined by the student's doctoral committee. Language competency should be demonstrated before the student begins the second year of the doctoral program.

Graduate Certificates

In most circumstances, only students enrolled in a degree program in history or those who have completed an MA in History may enter the graduate certificate non-degree programs in history. However, applicants who have completed a master's degree in an allied field may be eligible for admission to the Graduate Certificate in Archival Studies or Public History.

Admission Requirements

If applicants are not simultaneously seeking to matriculate into the MA or PhD program, they must have a MA in History or a related field and a satisfactory score on the General Test of the GRE. Applications must be approved by the Archival Studies or Public History program officers and by the department's graduate committee.

Applicants should ensure that these materials are sent to the Graduate School web application:

- Official transcripts from all undergraduate and graduate institutions
- Official scores from the General Test of the GRE sent from ETS

Applicants should ensure that these materials are sent to the director of graduate studies in the Department of History:

- Photocopy of GRE scores
- Photocopies of transcripts from all undergraduate and graduate institutions
- Three letters of recommendation
- A writing sample
- A statement of purpose

If applicants are not also seeking admission into the MA or PhD program, materials for admission to the Archival Studies or Public History Graduate Certificate programs may be submitted at any point. The program officers and the department's graduate committee will determine the academic term of admission.

If applicants are also seeking admission to the MA or PhD program, applications for the graduate certificates should be received by March 15.

Graduate Certificate in Public History

Students who complete 12 required hours of public history course work, 3 hours of public history internship (HIST 7910 Public History Internship), and a course in historical methods (HIST 7700 Seminar in Historical Methods) or equivalent are eligible to receive the Graduate Certificate in Public History.

Graduate Certificate in Archival Studies

Students completing 12 required hours of archival studies coursework, 3 hours of archival internship (HIST 7920 Archival Internship), and a course in historical methods (HIST 7700 Seminar in Historical Methods) or equivalent are eligible to receive the Graduate Certificate in Archival Studies.

Horticulture - MS, MAg, PhD

Graduate study in horticulture emphasizes the Master of Science and Doctor of Philosophy degrees. Graduates are prepared for careers in teaching, research, business, production, public service or Cooperative Extension. Master's-level programs are available to students with undergraduate degrees in horticulture and to those from other areas seeking opportunities in horticulture-related careers. For the MS program, students must have a bachelor's degree in horticulture or a related area from an accredited university and meet specific departmental academic standards. Applicants from related areas will be required to correct any undergraduate course deficiencies. All applicants must score a minimum of 800 (*testing prior to August 2011*) or 287 (*testing after August 2011*) on the sum of verbal and quantitative scores, and a minimum of 400 on the following formula score: $[\text{Verbal GRE} + (2 \times \text{Quantitative GRE}) + 1500 \times (\text{GPA} - 1)] / 10$ (*testing prior to August 2011*) or $[\text{Verbal} + (2 \times \text{Quantitative}) + 100 \times (\text{GPA} - 1)] / 1.5$ (*testing after August 2011*). GPA may be the total from the institution where you received your degree or the last 60 semester hours only. Those with a formula score of 380 to 399 will be eligible for acceptance on a provisional basis. Applicants with a formula score of less than 380 will not be accepted. A GRE Analytical Writing Score of 3.0 or above is required. For applicants scoring less than 3.0 on the essay portion of the GRE, ENGL 3040 Technical Writing is required as a deficiency course. The MS requires a minimum of 30 credit hours of graduate work, including at least 21 credit hours in the major field of study and six of which may be research & thesis hours (HORT 7990). The student's plan of study is individually tailored by the student, the major professor and the advisory committee to meet the student's career goals. A thesis based on research by the student is required. Students in the MS program in Horticulture who are on departmental funding cannot change to the MAg program.

Admission requirements for the Master of Agriculture program, a non-thesis degree, are the same as for the MS degree. The MAg requires successful completion of 32 credit hours, 21 of which must be in agricultural sciences. Credit for HORT 7990, Research and Thesis, cannot be counted toward graduation requirements for the MAg. Additional courses may be required for individual students as determined by the major professor and the advisory committee. There is no specific schedule of courses for MS or MAg students or a foreign language requirement for any graduate students in horticulture. Students in this option must complete a research or special project and pass a comprehensive oral exam covering course work and the project.

Admission to the Doctor of Philosophy program requires the completion of a thesis-based degree and meeting the same requirements as for master's-level programs. Doctoral candidates must follow all Graduate School and departmental requirements concerning course work. For the PhD, the Graduate School requires a minimum of 30 semester hours of graded (e.g. A, B, C) graduate course work (6000-level and above) beyond the bachelor's degree, and at least 30 semester hours of additional graduate course work that may include un-graded courses, including 7990 and 8990. The advisory committee may require additional course work. Upon completion of all course work, PhD students may be required to take a general written examination by his/her committee. Students must pass all parts of the written examination before scheduling the required preliminary oral examination (referred to as the PhD prelim exam). After satisfactory completion of the prelim exam the student advances to candidacy. The PhD student will conduct independent research and prepare a dissertation through the guidance and direction of an advisory committee. After completion of the dissertation, the student must pass a final oral examination defending the dissertation.

Several minors are available for horticulture graduate students. Auburn University's Department of Horticulture and School of Forestry and Wildlife Sciences offer a minor in Urban Forestry. An interdisciplinary minor in Environmental Studies administered by the Agronomy and Soils Department is also an option, as are minors in Ecology and Biochemistry and Cell/Molecular Biology.

Human Development and Family Studies - MS, PhD

The Department of Human Development and Family Studies offers graduate instruction leading to the master of science with options in human development and family studies, and marriage and family therapy; and the doctor of philosophy with a focus on interpersonal competence and relationship dynamics within the context of the family. The department emphasizes the integration of knowledge from various fields for the purpose of understanding and developing professional skills for careers in college or university teaching and research, teaching and supervision in programs for young children, adolescents, parent education, marriage and family therapy, community service, Cooperative Extension, government, business and industry. To promote training and research, the Department operates the Auburn University Early Learning Center, Harris Early Learning Center of Birmingham and the Center for Marriage and Family Therapy. The marriage and family therapy option is accredited by the American Association for Marriage and Family Therapy Commission on Accreditation for Marriage and Family Therapy Education. Both the Auburn University Early Learning Center and Harris Early Learning Center of Birmingham are accredited by the National Academy of Early Childhood Programs, a division of the National Association for the Education of Young Children.

For admission, a background in the social and behavioral sciences is highly desirable and should include course work in human development, family relations, anthropology, sociology, psychology and statistics. There is no language requirement for the MS or PhD degrees. See <http://www.humsci.auburn.edu/hdfs/grad-admissions.php> for specific requirements in these concentrations.

The MS requires a minimum of 30 semester hours in the human development and family studies concentration and 52 semester hours in the marriage and family therapy concentration, a thesis, and other fundamental work.

The PhD program requires a minimum of 60 credit hours beyond the BS. This program requires course work with a theoretical and substantive emphasis in family and child relationships, a supporting emphasis that provides a multidisciplinary understanding of children and families, a research and statistics component, and an empirical dissertation. For more detail about degree requirements including required courses and all departmental policies see <http://www.humsci.auburn.edu/hdfs/files/guidetogradprograms.pdf>, and http://www.humsci.auburn.edu/hdfs/files/phd_web_procedural_guide.pdf.

Graduate research may focus on relationship studies at any stage of the life cycle, including parent-child, family, marital, non-marital, peer, friendship, and family-child care-work. Graduate assistantships are available to students who have achieved superior rank in their previous academic work.

Industrial Design - MID

The department offers the master of industrial design degree accredited by the National Association of Schools of Art and Design (NASAD.) Applicants must have a bachelor's degree in industrial design or equivalent from an institution of recognized standing. Those with baccalaureate degrees from other disciplines may be admitted to the graduate program under condition that a minimum of 43 post baccalaureate credit hours in industrial design be completed at the undergraduate level with a 3.0 GPA. Students without an undergraduate Industrial Design degree are admitted during the summer semester and awarded a bachelor of science in environmental design (NASAD accredited) upon completion of the three semester post baccalaureate program. Upon admission to the master's program successful completion of 35 graduate level credit hours, including a thesis is required. A 40-credit hour non-thesis option is available. Credit for INDD 7990 Thesis may not exceed six hours. Course content beyond the 14-credit hour core curriculum will be structured to accommodate the student's area of interest. Completion of an industry collaboration studio (INDD 7910 Industry Practicum) is required. There is no language requirement. An external terminal document draft review and a 3.0 overall graduate GPA

are required. Participation in department sponsored international travel programs may be used as credit towards graduation. Students are admitted only in the fall semester. Applications to the graduate program must be complete by 1 February 2013.

All courses are (3) credits except Special Problems-Studio INDD 6960 (5) credits, Thesis Design INDD 7990 (2-5) credits and Industry Practicum INDD 7910 (5) credits. Thesis requires (35) credits minimum, *four semesters*, with no more than (6) credits taken in INDD 7990. Non-Thesis requires (40) credits minimum, *four semesters* with (3) credits taken in INDD 7980. It is required that MID students take no more than 12 graduate credits per semester (9 is full-time) and enter the program during fall semester. All thesis, non-thesis documentation drafts for the MID must be completed and submitted for final graduation review by the respective graduate committee **the semester prior to** the intended semester of graduation. A 3.0 GPA or above is required to qualify for graduation. Select INDD 6960 classes may be offered during the summer semester. Graduate students transferring from other INDD programs will be reviewed for admission on a case by case basis but must complete all AU/MID Required Courses. All graduate students must complete one industry collaboration studios (INDD 7910 Industry Practicum-Studio.) **The recommended enrollment in graduate classes is eight students.** No more than 15 credits in INDD 6960 may be used toward graduation.

Required Courses

First Semester

Fall	Hours
INDD 7010 Design Orientation	3
INDD 7020 Computer/Industrial Design	3

Third Semester

Fall	Hours
INDD 6120 Portfolio	3

Fourth Semester

Spring	Hours
Select one of the following:	(2-5) or (3)
INDD 7980 Non-Thesis Design (Grade)	
INDD 7990 Design Thesis (No Grade)	

Semester of Enrollment

Fall	Hours	Spring	Hours
INDD 7910 Industry Practicum	5	INDD 7910 Industry Practicum	5

Elective Courses

INDD 6030	Case Studies in Design (Fall)	3
INDD 7640	Aesthetics in Design (Spring)	3
INDD 7650	Design Theories (Fall)	3
INDD 7660	Industrial Design Methodology (Fall)	3
INDD 7610	Principles of Industrial Design (Spring)	3
INDD 7620	Design Management (Spring)	3
INDD 7630	Human Factors in Design (Spring)	3
INDD 7670	Systems Design (Spring)	3
INDD 6010	History of Industrial Design II (Spring)	3
INDD 6960	Special Problems (Summer, Fall, Spring)	1-5
INDD 6960	Special Problems	1-5

INDD 7980	Non-Thesis Design	3
INDD 7990	Design Thesis	1-5

Industrial and Systems Engineering - MISE, MISE/MBA, MS, PhD

The department offers the master of industrial and systems engineering, a joint program leading to both MISE and MBA degrees, the master of science and the doctor of philosophy. These programs are for students with undergraduate degrees in industrial engineering, other engineering disciplines, mathematics and sciences.

All applicants must submit Graduate Record Examination scores for the General Test except MISE/MBA applicants who may instead submit Graduate Management Admission Test scores.

Both the MISE and MS programs require 30 hours of course work. The MISE is oriented toward professional practice. MISE students must take 15 semester hours from a set of core courses, 12 hours of electives and either a three hour design project (project option) or an additional elective (coursework option). The MS requires the same 15 hours of core courses, nine to 11 hours of electives and a 4-6-hour thesis. Both degrees also require a minimum of one hour of seminar.

The MISE/MBA is a 54-hour program administered jointly by I.S.E. and the MBA program. For the MISE portion of the dual degree, the program consists of 15 semester hours of I.S.E. core courses, 6 hours of I.S.E. electives and 3 hours of I.S.E.-related electives and either a three hour design project (project option) or an additional I.S.E.-related elective (coursework option). A minimum of one semester hour of I.S.E. seminar is also required. For the MBA portion of the dual degree, there are seven core (BUSI) classes including 3 hours of MBA Final Project class in the final Fall semester plus one 3 hour internship for on-campus students or an elective that is part of the Business curriculum if the internship is not required. Students must apply separately to each program (MISE and MBA), but only have to pay one application fee.

Research involvement is the dominant element in the doctoral program. It provides a quality educational experience for selected individuals whose records indicate excellent potential not only for superior performance in course work, but also for the research and ensuing dissertation which is an original and scholarly contribution to the field. The PhD program requires at least 60 semester hours of coursework beyond the bachelors, including 15 semester hours of core courses. A minimum of one hour of seminar is also required. The student must demonstrate a high level of proficiency in a specific area of industrial and systems engineering as well as a competence in the entire field. The degree usually requires at least one calendar year of research.

Integrated Design & Construction - MIDC

The Master of Integrated Design & Construction program at Auburn University is designed to prepare graduates for success in a rapidly shifting industry and to prepare students who will be the professionals leading the future evolution of design and construction. In the U.S., these industries are experiencing significant changes in the relationship between their respective professionals and the delivery systems they employ. Through a variety of models, these formerly fragmented professions are crafting new ways of working together and exploiting new technologies to create more efficient, economical, and sustainable projects in the built environment.

Historically, architecture and construction management students have been trained in separated academic environments that did not capitalize on opportunities to work collaboratively. The Master of Integrated Design & Construction program at Auburn University seeks graduate students from the design, engineering, construction, and civil engineering disciplines who will embrace teamwork, collaboration, and empathy within the differing disciplinary roles and responsibilities. Commensurate with its mission, interdisciplinary courses are offered in lecture, seminar and studio formats. The program is three semesters (Fall-Spring-Summer), after which successful candidates would be awarded the Master of Integrated Design & Construction degree.

Interested students should complete an on-line application through the Graduate School, and have transcripts sent directly to the university from all undergraduate institutions attended. The GRE is not required for this program. Applicants should also send the following directly to the program, whose address is on the MIDC website:

- Three letters of recommendation
- Portfolio of representative work (students with design/architecture undergraduate degrees)
- Resume
- Statement of Purpose
- Self-analysis of discipline-relevant technology

The 36 credit-hour program, jointly housed in the School of Architecture and the McWhorter School of Building Science, features a focus that is unique. Through current models of professional practice, it delivers the development and study of high performance projects in the built environment via a dynamically collaborative and integrated framework. Among other tools, the program will capitalize on a new generation of digital resources such as BIM, parametric modeling, web-based shared work environments, and other innovations to facilitate collaboration.

Students take required 3-credit courses 6510, 6640, 7650, 7550, the 1-credit lab 7551, and also the 7-credit studios 6610 and 7630, 6-credit studio 6620, as well as one additional 3-credit graduate elective.

For more information, see the program's web site at www.cadc.auburn.edu/midc.

Kinesiology - MEd, MS, EdS, PhD

The Department of Kinesiology offers graduate degree programs leading to the master of education (non-thesis option), master of science (thesis option), and doctor of philosophy. Offerings also include a graduate certificate and a graduate minor. The department's advanced programs prepare students for careers in sport performance and health optimization, program management in clinical and corporate fitness settings, the fitness and sport-related industry, and teaching and research in educational settings.

Master's Degree Programs (MEd/MS)

Master's programs are offered in exercise science, physical activity and health, and physical education/teacher education. Specialized areas of study include athletic training (post-certification), biomechanics, exercise physiology, physical activity and health, motor behavior, and pedagogy.

Applicants to master's degree programs must satisfy the Graduate School's admission requirements. Departmental admission requirements include a bachelor's degree from an accredited college or university, academic good standing at the institution last attended, an undergraduate minimum GPA of 2.75, competitive GRE scores, letters of recommendation, and departmental approval.

Master's degree programs in physical education/teacher education include alternative master's and traditional master's certification programs. The alternative master's program offers qualified students who hold non-teaching baccalaureate degrees a route to initial teacher certification while simultaneously earning a master's degree; the traditional master's program offers advanced study for individuals who hold a bachelor's level professional educator certification. Both programs are approved by the Alabama State Board of Education. The College of Education is accredited by the National Council for Accreditation of Teacher Education (NCATE).

Applicants to the alternative master's program in physical education/teacher education must submit a clear background check and satisfy the State's teaching field admission requirements; applicants to the traditional master's program in physical education/teacher education must submit a clear background check and hold a valid bachelor's-level professional educator certificate.

Degree requirements for all master's programs include a minimum of 30 hours and a written comprehensive exam. Additional degree requirements for the alternative master's program in physical education/teacher education are in compliance with regulations established by the Alabama State Board of Education. These requirements include a semester long, full-time internship and satisfactory completion of the Alabama Prospective Teacher Testing Program which consists of a passing score on each of the Basic Skills Assessments (Applied Mathematics, Reading for Information, and Writing) and a passing score on the appropriate Praxis II subject assessments prior to internship. Alternative master's programs typically take a minimum of four semesters to complete if enrolled fulltime.

Doctor of Philosophy Degree Program (PhD)

Applicants to the department's PhD program must satisfy the Graduate School's admission requirements. Departmental admission requirements include competitive GRE scores, current resume, statement of purpose (including research focus), letters of recommendation, and approval by the department.

The PhD program requires a minimum of 80 semester hours beyond the bachelor's degree. Research methods and statistics are components of all doctoral programs. The remaining hours are divided between the area of specialization and approved support courses. After satisfactory completion of coursework and a general written and oral examination, the student advances to candidacy. Doctoral students must register for at least 10 semester hours of doctoral research while completing a dissertation.

Specialized areas of doctoral study include biomechanics, exercise physiology, motor development, sport and exercise psychology, motor learning and control, physical activity and health, and teaching and research in physical education.

Master's and Specialist Level Certification

Individuals completing State-approved master's level certification programs are eligible to apply for Alabama Class A certification; individuals completing State-approved specialist level certification programs are eligible to apply for Alabama Class AA certification. Individuals seeking certification in states other than Alabama are responsible for contacting those state certification offices to obtain their application form and requirements. The State of Alabama signs the National Association of State Directors of Education and Certification (NASDTEC) Interstate Agreement which facilitates the applications of program graduates when they apply for certification in other states.

Graduate Minor and Graduate Certificate

The Department of Kinesiology in collaboration with the Department of Educational Foundations, Leadership and Technology offers a graduate minor in sports management. In addition, the Department of Kinesiology offers a graduate certificate in movement skill analysis.

Additional Information

Detailed admission and program requirements for the department's multiple areas of graduate study can be accessed at Academic Programs (<http://www.education.auburn.edu/programs/degreeoption.html>) on the College of Education's website.

Degree Programs

- Exercise Science (<http://education.auburn.edu/programs/hes>) (option) – MEd/MS
- Physical Activity and Health (<http://education.auburn.edu/programs/hep>) (option) – MEd/MS
- Physical Education/Teacher Education (<http://education.auburn.edu/programs/hpn>) – MEd/MS (alternative and traditional MEd)
- Kinesiology (<http://education.auburn.edu/programs/kns>) – PhD

Graduate Certificate

- Movement Skill Analysis (http://education.auburn.edu/programs/certs_minors/mvsa.html)

Graduate Minor

- Sport Management (http://education.auburn.edu/programs/certs_minors/spmn.html)

Landscape Architecture - MLA

The School of Architecture, Planning and Landscape Architecture offers the Master of Landscape Architecture (MLA). This is a first professional degree program accredited by the American Society of Landscape Architects. The MLA consists of 96 credit hours delivered over six consecutive semesters, which include Summer as a full teaching semester. Students with an undergraduate degree enter in the Summer semester and graduate two years later. The program accepts and encourages applicants from a wide range of disciplines in the humanities, the sciences and the arts. Students who have professional design degrees in other disciplines [architecture or urban design for instance] or who have undergraduate degrees in landscape architecture, can complete the Master of Landscape Architecture in five semesters, by application, through Advanced Placement – just under two years of full time study. Advanced Placement is not automatic, but based on portfolio and academic merit. Successful applicants for Advanced Placement enter in the Fall semester. Students who are currently in the Auburn University pre-landscape architecture programs [Bachelor of Horticulture and Bachelor of Environmental Design] complete their undergraduate degrees as the first year of the MLA. These applicants should contact the Program Chair or the Program Administrator for more information. Pre-landscape architecture students enter in the Summer semester.

Prospective students apply for admission online to the Graduate School. The Graduate Record Examination is not a requirement; however, the Admissions Committee will require the undergraduate record, three letters of recommendation, a 500 word statement of intent and, in the case of applicants for Advanced Placement, a portfolio of work. Applicants may apply for the Concurrent Degree in Landscape Architecture and Community Planning. This is a course of study that enables students to graduate with degrees in both disciplines by completing one semester less than if both degrees were undertaken separately. Application is through the Program Chair.

The program is a studio design-based course of study that incorporates learning from across the disciplines of art, architecture, urban design, ecology, information technology and the natural sciences. The program studies regional and urban landscape systems through the relationships between human dwelling and natural systems. Graduates will be prepared to take action in rebuilding urban landscapes, reconnecting fractured ecosystems, and regenerating human and nonhuman habitats.

Each semester consists of 16 credit hours, including six credit hours of studio. In their final year of study students may engage either in a self-directed design research thesis or a terminal studio that extends their skills in a series of complex projects. Students must also be prepared to undertake numerous field studies in a variety of locations that can involve interstate visits and several days away from Auburn University. A Study Abroad option is available in the second summer. All field trips and Study Abroad incur extra costs.

The Master of Landscape Architecture offers a limited number of Graduate Assistantships each year. GA positions are highly competitive, and applications exceed availability. The assistantships are awarded on the basis of merit. Students who wish to apply for an assistantship must do so when they send their materials to the Program Chair. There is no form for this - a covering letter will suffice. When assessing the merit of applications for research assistantships, faculty review the following:

- Academic transcript
- GPA
- Portfolio
- Statement of intent.

Applicants who can attend the Master of Landscape Architecture only if they receive an assistantship should make this clear to the Program Chair on application. As a rule Graduate Assistantships involve working with faculty on research projects. A wide range of tasks is expected to be performed to a high standard. Punctuality, timeliness and cordiality are strict requirements. Graduate Assistantships provide a tuition waiver and a monthly stipend. The tuition waiver applies to in-state and out-of-state students alike, and covers the tuition fee for each semester that the student is a GRA. Students who are appointed as GAs are required to pay the Professional Fee. Assistantships are awarded on an annual basis [sometimes on a semester basis] and there is no guarantee that recipients will receive a continuance of their assistantship. Reappointment will be made on the basis of students having:

- Maintained a high work standard
- Completed all their coursework and assignments satisfactorily
- Performed well for the faculty member to which they have been assigned.

Any questions about assistantships should be directed to the Program Chair. The Master of Landscape Architecture does not currently offer scholarships.

All students who enter the MLA must ensure that they have a their own laptop computer that conforms to the requirements set out on the Landscape Architecture page of the College of Architecture Design and Planning website.

Management - MSBA, PhD

The department offers graduate study leading to the master of science and the doctor of philosophy degrees. Applicants to each program must hold a bachelor's degree from a recognized institution. Additionally, students must complete a common body of knowledge curriculum comprising core courses in business. Graduates of business schools will likely have met this requirement; graduates of other programs may be required to complete additional courses to compensate for deficiencies.

The MSBA - HRMN program (currently discontinued) offers specialized training to graduate students desiring an intense background in human resource management. The objective of the program is to prepare students for careers in Human Resource Management or for further graduate work. The program has a thesis and non-thesis option. The program of study is determined by the student and the student's advisory committee based on the student's background and areas of interest.

The PhD program prepares graduates to conduct high-quality research in universities, colleges government and business. Individual flexibility is provided in a program of study that develops the conceptual and methodological skills that graduates need to establish a leadership position in their chosen fields. Objectives of the program are accomplished through the completion of a formal program of study, successful completion of a statistics core, preparation and completion of two examination manuscripts, and dissertation research. Students with assistantships may also be required to teach. Students are expected to have a fulltime presence on campus. Applications to the PhD program must complete a departmental application and an Auburn University Graduate School application. For full consideration, applications must be received no later than February 1, prior to the fall term.

Information concerning specific program requirements may be obtained by visiting www.business.auburn.edu.

Materials Engineering - MME, MS, PhD

Materials Engineering offers graduate programs of instruction and research leading to the degrees of master of materials engineering (MME), master of science (MS) and doctor of philosophy (PhD). All applicants must submit GRE scores for the General Test. Students completing all degree programs are expected to have knowledge in the following areas: mechanical properties; materials structure; materials thermodynamics; kinetics; and electrical, optical and magnetic properties of materials. There are no foreign language or minor requirements for Materials Engineering graduate degrees. All students must submit an approved plan of study within one year of matriculating in the program.

The MME is intended for those who expect to enter the engineering profession at an advanced level or are practicing engineers wishing to gain additional fundamental knowledge in the field of materials. Those students lacking the necessary background may be required to take additional course work. The requirements for the degree are 33 credit hours including a final engineering report. The topic of the report will be agreed upon by the student and the advisory committee. Applicants must have a baccalaureate degree in engineering or science from an institution of recognized standing. Students must pass a qualifying examination prior to taking the final general comprehensive examination required by the Graduate School.

The MS is intended for those who seek advanced knowledge in materials science or engineering for a career in research or other professional practice. The applicant must have a baccalaureate degree or its equivalent in an engineering or scientific discipline from an institution of recognized standing. Those lacking the necessary background will be required to take additional course work to ensure the continuity of their educational and professional experience. The MS program consists of 30 credit hours selected from areas of study appropriate to the objectives of the applicant and includes a thesis. Students must pass a qualifying examination prior to taking the final comprehensive examination required by the Graduate School. The PhD program requires that students pass qualifying examinations (oral and written) with a greater proficiency than master's students prior to taking the comprehensive examinations. The program is arranged on an individual basis with the student's advisory committee and in accordance with Graduate School guidelines. Students admitted to the doctoral program are required to take the general comprehensive examination based on a research proposal developed by the student within two years after entering the program. The student should be prepared to be examined in all areas of materials engineering.

Mathematics and Statistics - MS, MAM, MPS, PhD

The Department of Mathematics and Statistics offers programs leading to the master of science and doctor of philosophy in both pure and applied mathematics and statistics, the non-thesis master of applied mathematics, and the master of probability and statistics (also see Statistics). In addition, the department regularly offers actuarial science courses that are approved by both the Society of Actuaries and the Casualty Actuarial Society; they are designed to provide the background and material covered in the first three actuarial exams.

The master of applied mathematics gives students a strong foundation in one of several fundamental areas of applied mathematics. It is a flexible degree with courses being chosen in conjunction with the advisory committee, some of which may be relevant courses offered by other departments. The master of probability and statistics and the master of science in statistics degrees provide a solid foundation for careers involving applications of statistics. The master of science degree in mathematics develops both content knowledge of the student through coursework, and provides the opportunity to delve deeper into an area of mathematics through the writing of a thesis. The PhD is designed to give students a thorough understanding of a broad body of knowledge related to their field of study, as well as to develop their research capabilities. PhD students are required to pass one oral and three written preliminary examinations. A statistics concentration is available for the PhD degree (see Statistics).

The internationally known faculty of around 50 professors works in areas of algebra, analysis, applied mathematics, discrete mathematics, geometry, linear algebra, logic, numerical analysis, partial differential equations, probability, set theory, statistics and topology. Some professors maintain applied research programs associated with several government and industrial laboratories, and one holds the Associate of the Society of Actuaries designation.

Admission to the program is based on a student's undergraduate record, three letters of recommendation from former teachers, GRE scores and graduate GPA (for doctoral students). The GRE subject test is not required. A bachelor's degree in mathematics is not required, but students without such a background may be expected to take additional courses to make up deficiencies. The department follows the guidelines for graduate degrees set forth in this *Bulletin*. Doctoral students must satisfy the departmental preliminary examination requirement to continue their teaching assistantship. Course work in mathematics may be transferred from other institutions, subject to university limitations. (See <http://www.math.auburn.edu/>.)

Most students in the program are supported financially during their studies through Graduate Teaching Assistantships and through tuition waivers given to all teaching assistants (with some restrictions). The Baskervill, Fitzpatrick, and Haynesworth Fellowships

(around \$5,000 each) are awarded annually to qualified students in the Department of Mathematics and Statistics. The department occasionally has Graduate Research Assistantships available in conjunction with departmental contractual research programs. The department requires that all international GTAs who have responsibility for teaching a class be proficient in English, passing the test of spoken English.

Mechanical Engineering - MS, MME, PhD

The Mechanical Engineering Department offers graduate programs of instruction and research leading to the degrees of master of mechanical engineering, master of materials engineering (see separate listing of graduate program in materials engineering), master of science, and doctor of philosophy. Educational and research facilities are available to support graduate study in solid mechanics, experimental mechanics, electronic packaging and reliability, fracture and failure mechanics, robotics, vibrations, controls, dynamical systems, engineering design, manufacturing, friction-lubrication-wear, engineering acoustics, computer-aided design, fluid dynamics, transportation systems, conventional and renewable energy systems, thermal/fluid sciences and nanotechnology applications. The applicant must hold a bachelor's degree or its equivalent from an institution of recognized standing. If the applicant's undergraduate degree is other than mechanical engineering, an individualized plan of study will be developed to impart the critical skills inherent in the bachelor's mechanical engineering program. All applicants must submit Graduate Record Examination scores for the General Test and will be evaluated on an individual basis by the Mechanical Engineering Graduate Committee.

Non-Thesis Option: The MME is intended for those who expect to enter the engineering profession at an advanced level. Emphasis is placed on professional development. Requirements for the degree consist of completing 30 credit hours of 6000-7000 level courses. A total of 21 credit hours of graded course work should be in mechanical engineering. There is a required faculty supervised project culminating in a final comprehensive oral examination by a committee of at least three faculty members including the major professor.

Thesis Option: The MS applicant must have a baccalaureate or its equivalent in an engineering or scientific discipline from an institute of recognized standing. The degree requires 30 credit hours of 6000-7000 level courses including 6 credit hours of MECH 7990. A minimum of 21 credit hours of graded course work should be in mechanical engineering courses. Substitution of courses from other engineering/science disciplines is permitted when appropriate courses are unavailable in mechanical engineering. All candidates must pass an oral defense of their written thesis including a comprehensive examination covering the major courses. A committee of at least three faculty including the major professor will take part in the thesis defense.

The doctor of philosophy provides for advanced coursework and emphasizes original, creative research. A dissertation embodying the results of this research represents a major portion of the requirements for this degree. The PhD program will consist of a minimum of 60 credit hours, including dissertation, beyond the BS degree. PhD students will select their major courses from those at the 7000-8000-level unless there are special requirements for more basic courses. A minimum of 21 credit hours of graded course work should be in mechanical engineering courses. This amount could include up to 4 credit hours of MECH 7990 or equivalent. Substitution of courses from other engineering/science disciplines is permitted when appropriate courses are unavailable in mechanical engineering. The PhD also requires a coordinated minor of at least 9 credit hours of graded coursework in a closely related field such as mathematics, physics, chemistry, or other engineering disciplines. A minimum of 10 credit hours of MECH 8990: Dissertation & Research is also required. There is no language requirement for the PhD.

The General Doctoral Examination (Preliminary Examination) must be taken by those seeking a PhD. This examination, administered by the major professor in coordination with members of a committee of at least four faculty (including the major professor) consists of two parts: (1) a written Qualifying Examination based upon knowledge acquired from coursework, taken within four semesters from the date of entry, and (2) an oral examination which includes questions on knowledge acquired from coursework as well as a detailed presentation and defense by the student of his/her proposed dissertation research. All PhD candidates must also pass a Final Examination consisting of an oral defense of their written dissertation. A maximum of two attempts each is allowed for passing the General Doctoral Examination and the Final Examination.

Nursing - MSN

The School of Nursing offers a MSN program jointly with Auburn University Montgomery. Graduates are ready to lead in educator and advanced practice nurse roles in health-related services to diverse populations. The MSN Program currently has two program options: Nurse Educator (33 credit/semester hours) and Primary Care Nurse Practitioner (43 credit/semester hours). Both formal program options share a 24-credit/semester hour core and then courses specific to each program option. The program is offered via a hybrid format where a few course meetings may be held over the semester. Courses meetings may be held either at AU or AUM depending on the pre-published schedule for that particular semester. The program does not require a thesis. Students are required to complete

a capstone paper, generally a plan for an evidence-based intervention either in the educational setting or in the primary care practice setting.

Admission to both formal program options is competitive and all qualified applicants may not be admitted. Schools of Nursing Admission Minimum Requirements include:

- A bachelor of science in nursing from an accredited college or university
- Good academic standing from the last university attended
- Overall GPA of 3.0
- Unencumber RN License. Students completing a BSN Program during the semester of application must request a waiver from the admission committee in order for the application to be considered.
- Three Professional References
- 500-word Professional Goal Statement. This statement will include: reasons for pursuing this degree and program option, past experiences, career goals and past achievements.
- Successful completion of undergraduate statistics course.

Applicants may be asked by the School of Nursing for additional information and may be required to interview with the Director of the MSN Program, the MSN admission committee, and/or graduate faculty.

Full-time admission is available in the summer semester only and part-time admission is available, summer, fall, and spring if space is available. It is unlikely due to scheduling of courses and pre-requisites that students admitted part-time can move to full-time status. Courses are offered only one time per each academic year so changing programs of study from full to part-time may impact planned graduation dates. Application deadlines are: (1) Summer Semester- March 1, (2) Fall Semester-July 1, and (3) Spring Semester-October 1. The application is completed online and may be found on the Auburn University Graduate School webpage.

Core Courses

NURS 7340	Advanced Theoretical Foundations of Nursing	3
NURS 7350	Quality, Safety, and Prevention Using Technology	3
NURS 7360	Evidence-Based Practice I	2
NSG 6671 Pathophysiology (Troy University)		
NURS 7250	Healthcare Policy and Ethics for the Nurse Leader	3
NURS 7370	Evidence-Based Practice II	2
NSG 6649 Advanced Pharmacology (Troy University)		
NURS 7110	Advanced Physical Assessment/Applied Clinical Concepts I	3
NURS 7940	Evidence-Based Practice III	2

Nurse Educator Specific Courses

NURS 7320	Development and Evaluation of Educational Programs in Nursing	3
HIED 8500	The Professoriate	3
NURS 7810	Practicum in Teaching	3

Primary Care Nurse Practitioner Specific Courses

NURS 7220	Roles and Issues of the Primary Care Practitioner	3
NURS 7330	Diagnostic Reasoning and Clinical Management	3
NURS 7440	Primary Care I: Women and Children	3
NURS 7550	Primary Care II: Adults and Elderly	3
NURS 7920	Primary Care Practicum	7

Nutrition - MS, PhD

- MS Nutrition
- PhD Nutrition

- MS Nutrition with emphasis in Hotel and Restaurant Management
- PhD Nutrition with emphasis in Hotel and Restaurant Management

The Department of Nutrition, Dietetics, and Hospitality Management offers graduate study leading to the Master of Science (MS) and the Doctor of Philosophy (PhD) degrees with emphasis in nutrition or hotel and restaurant management. The combination of these areas within a single department facilitates integrative studies addressing normal and clinical nutrition, food and health issues, food service, as well as hospitality management. For the MS degree, the student may specialize in general, community, clinical or sports nutrition, food service management, or hotel and restaurant management. The department emphasizes the integration of knowledge from various fields for the purpose of understanding and developing professional skills for careers in higher education, government, and food, healthcare and hospitality industries.

For admission to the MS or PhD programs, the student must have a bachelor's degree from an accredited institution, a satisfactory GPA, a satisfactory GRE score (a GMAT score may substitute for the GRE score for the hotel and restaurant management emphasis), and acceptable undergraduate academic preparation. The admission committee will evaluate all application items, including transcripts, GRE/GMAT scores, letters of recommendation, a statement of intent, and resume. International applicants are also required to submit satisfactory TOEFL scores. Applicants lacking background requirements in chemistry and anatomy and physiology for the nutrition program must make up deficiencies prior to starting the program.

The **MS degree** with a thesis option requires a minimum of 30 semester hours and a thesis. The MS degree with the nonthesis option requires a minimum of 33 semester hours and a scholarly research project.

Required courses for the thesis option with an emphasis in nutrition include:

NTRI 7500	Minerals	2
NTRI 7510	Vitamins	2
NTRI 7520	Macronutrients Integr Metabo	4
NTRI 7530	Human Nutrient Metabolism	3
ERMA 7300 or STAT 7000	Design and Analysis in Education I Experimental Statistics I	3-4
NTRI 7050	Methods Of Research	2
NTRI 7850	Research Seminar for Master's Program	1
NTRI 7990	Research And Thesis (minimum of 5 hours)	1-10
Elective Graduate Level Courses		8

Required courses for the non-thesis option with an emphasis in nutrition include:

NTRI 7500	Minerals	2
NTRI 7510	Vitamins	2
NTRI 7520	Macronutrients Integr Metabo	4
NTRI 7530	Human Nutrient Metabolism	3
ERMA 7300 or STAT 7000	Design and Analysis in Education I Experimental Statistics I	3-4
NTRI 7050	Methods Of Research	2
NTRI 7850	Research Seminar for Master's Program	1
NTRI 7980	Nonthesis Research (minimum of 5 hours)	1-6
Elective Graduate Level Courses		11

Examples of elective courses for the MS with emphasis in nutrition may include:

NTRI 6820	Nutrition In The Life Cycle	3
NTRI 6560	Nutrition and Food Service Management	4
NTRI 6020	Medical Nutrition I	3
NTRI 6030	Medical Nutrition II	3
KINE 7680	Advanced Physiology of Exercise I	3
KINE 7700	Advanced Physiology of Exercise II	3

KINE 8780	Biochemistry of Exercise	3
KINE 6500	Exercise Technology I: Principles of Exercise Testing and Interpretation	4
KINE 6550	Exercise Technology II: Applied Exercise Testing and Interpretation	4
KINE 6400	Exercise Prescription for Normal and Special Populations	3
KINE 7750	Advanced Sport Psychology	3
VBMS 7070	Endocrinology	4
BIOL 6220	Introductory Molecular Genetics	3
BIOL 6190	Cell and Molecular Signal Transduction	3
BCHE 7220	Principles of Cellular and Molecular Enzymology	3
BIOL 6500	Immunology	3
BCHE 7280	Topics in Biochemistry	1-3
NTRI 7910	Practicum in Nutrition and Dietetics	1-12
ADED 7600	Nature of Adult Education	3
ADED 7060	Curriculum and Program Planning in Adult Education	3
NTRI 7930	Advanced Independent Study	1-6

Required courses for the thesis option with an emphasis in hotel and restaurant management include:

NTRI 7050	Methods Of Research	2
NTRI 7850	Research Seminar for Master's Program	1
NTRI 7990	Research And Thesis	Minimum of 4
HRMT 6530	Science of Quality Service in Hospitality	3
HRMT 6570	Global Hospitality	3
HRMT 7000	Hospitality Enterprise	3
HRMT 7010	Advanced Tourism Analysis	3
HRMT 8860	Current Issues in Hospitality Management	3
ERMA 7300	Design and Analysis in Education I	3
Elective Courses		5

The non-thesis option in the hotel and restaurant management emphasis is available through both distance education and on campus. Required courses for the non-thesis option with an emphasis in hotel and restaurant management include:

NTRI 7050/7056	Methods Of Research	2
NTRI 7980/7986	Nonthesis Research	Minimum of 4
HRMT 6530/6536	Science of Quality Service in Hospitality	3
HRMT 6570/6576	Global Hospitality	3
HRMT 7000/7006	Hospitality Enterprise	3
HRMT 7010/7016	Advanced Tourism Analysis	3
HRMT 8860/8866	Current Issues in Hospitality Management	3
Elective Courses		12

Examples of elective courses for the MS with emphasis in hotel and restaurant management may include:

HRMT 6460	Catering And Event Management (Fall-1 hr. and Spring Semester-2 hrs.)	1
HRMT 6461	Catering and Event Management	2
HRMT 6550	Club Management	3
HRMT 6540	Conference Coordination	3

NTRI 6380	Study/Travel in Nutrition, Dietetics and Hospitality Management	1-6
HRMT 7920	Prof Internship In Hrmt	3

PhD Degree

The PhD degree requires a minimum of 60 semester hours beyond the bachelor's degree, a general doctoral examination with written and oral components, and a dissertation describing original research in the area of nutrition or hotel and restaurant management. The student becomes a candidate for the degree on successful completion of the general examinations. Course requirements for the PhD degree with emphasis in nutrition are the same as for the corresponding Master's degree or an equivalent course from another institution plus NTRI 8970, NTRI 8850, and NTRI 7280. Laboratories are available for human, animal, chemical, and physical research. Supporting courses to strengthen the nutrition major may be in, but not limited to, biochemistry, physiology, chemistry, animal science, kinesiology, education, and biostatistics.

Course requirements for the PhD degree with emphasis in nutrition include:

NTRI 7500	Minerals	2
NTRI 7510	Vitamins	2
NTRI 7520	Macronutrients Integr Metabo	4
NTRI 7530	Human Nutrient Metabolism	3
NTRI 7280	Laboratory Methods in Food Science and Nutrition	3
ERMA 7300 or STAT 7000	Design and Analysis in Education I Experimental Statistics I	3-4
ERMA 7310 or STAT 7010	Design and Analysis in Education II Experimental Statistics II	3
NTRI 7050	Methods Of Research	2
NTRI 8850	Research Seminar for Doctoral Program	1-2
NTRI 8970	Advanced Topics in Nutrition, Dietetics and Hospitality Management	1-6
NTRI 8990	Research And Dissertation	1-10
Elective Graduate Level Courses		

Examples of elective courses for the PhD degree with emphasis in nutrition may include:

NTRI 6820	Nutrition In The Life Cycle	3
NTRI 6560	Nutrition and Food Service Management	4
NTRI 6020	Medical Nutrition I	3
NTRI 6030	Medical Nutrition II	3
KINE 7680	Advanced Physiology of Exercise I	3
KINE 7700	Advanced Physiology of Exercise II	3
KINE 8780	Biochemistry of Exercise	3
KINE 6500	Exercise Technology I: Principles of Exercise Testing and Interpretation	4
KINE 6550	Exercise Technology II: Applied Exercise Testing and Interpretation	4
KINE 6400	Exercise Prescription for Normal and Special Populations	3
KINE 7750	Advanced Sport Psychology	3
VBMS 7070	Endocrinology	4
BIOL 6220	Introductory Molecular Genetics	3
BIOL 6500	Immunology	3
BIOL 6190	Cell and Molecular Signal Transduction	3
BCHE 7220	Principles of Cellular and Molecular Enzymology	3
BCHE 7280	Topics in Biochemistry	1-3
NTRI 7910	Practicum in Nutrition and Dietetics	1-12
ADED 7600	Nature of Adult Education	3

ADED 7060	Curriculum and Program Planning in Adult Education	3
NTRI 7930	Advanced Independent Study	1-6

Course requirements for the PhD degree with emphasis in hotel and restaurant management include:

- HRMT specialization: a minimum of 34 credit hours, including:

HRMT 6530	Science of Quality Service in Hospitality	3
HRMT 7000	Hospitality Enterprise	3
HRMT 7010	Advanced Tourism Analysis	3
HRMT 8860	Current Issues in Hospitality Management	3
HRMT 8870	Advanced Hospitality Management Research and Applications	3
HRMT 8880	Theoretical Developments for Hospitality	3

Graduate-level HRMT and/or related courses. At least 16

- Research support: a minimum of 16 credit hours, including:

NTRI 7050	Methods Of Research	2
NTRI 8850	Research Seminar for Doctoral Program	2
ERMA 7300	Design and Analysis in Education I	3
ERMA 7310	Design and Analysis in Education II	3

Graduate-level research/statistics courses. At least 6

- Dissertation: a minimum of 10 credit hours of NTRI 8990.

Examples of HRMT Specialization Elective Courses:

HRMT 6460	Catering And Event Management (Fall-1 hr. and Spring Semester-2 hrs.)	1
HRMT 6461	Catering and Event Management	2
HRMT 6550	Club Management	3
HRMT 6540	Conference Coordination	3
NTRI 6380	Study/Travel in Nutrition, Dietetics and Hospitality Management	1-6
HRMT 7920	Prof Internship In Hrmt	3

The hotel and restaurant management emphasis may take supporting courses in such areas as management, marketing, economics, and education. Course requirements for becoming a registered dietitian may be met during the graduate program by enrolling in additional required courses. Teaching, research, and extension assistantships are awarded competitively to qualified students.

Pharmaceutical Sciences - MS, PhD

Graduate study in pharmaceutical sciences leads to the degrees of master of science and doctor of philosophy. The doctor of philosophy in Pharmaceutical Sciences is offered through an interdepartmental program by the departments of Pharmaceutical Sciences and Pharmacy Care Systems. Students wishing to apply for PhD study in Pharmaceutical Sciences should apply to the PhD program in "Pharmaceutical Sciences" and specify the Pharmaceutical Sciences track.

The graduate program prepares students for teaching or research careers in academia, the pharmaceutical industry, as well as public and private research institutes. Students are expected to select one of the following areas of specialization: medicinal chemistry, pharmaceuticals, or pharmacology/toxicology.

For the MS program, students must have a degree in pharmacy or a bachelor's in an allied discipline such as biology, biochemistry or chemistry and satisfactory scores on the Graduate Record Examination. Requirements include completion of 30 semester hours, including a minimum of 6 credit hours of research and thesis. Course requirements for MS program are as follows:

Pharmacology/Toxicology

PYPS 6310	Pharmacology I	3
PYPS 6320	Pharmacology II	3
PYPS 6360	Cellular Pharmacology	3
PYPS 6350	Toxicology	3
Total Hours		12

Medicinal Chemistry

CHEM 7200	Advanced Organic Chemistry I	3
CHEM 7220	Advanced Organic Chemistry III	3
PYPS 7230	Advanced Medicinal Chemistry I	3
PYPS 7240	Advanced Medicinal Chemistry II	3
PYPS 7260	Separation Science	4
Total Hours		16

Pharmaceutics

PYPS 7010	Pharmacokinetics	4
PYPS 7030	Drug Products and Biopharmaceutics	4
PYPS 7040	Physical Pharmacy	4
Total Hours		12

For the PhD program, applicants must have a degree in pharmacy or a bachelor's or master's in an allied discipline and satisfactory scores on the Graduate Record Examination. The student pursuing the PhD will be expected to complete a minimum of 60 semester hours, including minimum of 10 credit hours for independent research and dissertation.

Course requirements for PhD program are as follows:

Pharmacology/Toxicology

PYPS 6310	Pharmacology I	3
PYPS 6320	Pharmacology II	3
PYPS 6360	Cellular Pharmacology	3
PYPS 6350	Toxicology	3
Total Hours		12

Medicinal Chemistry

CHEM 7200	Advanced Organic Chemistry I	3
CHEM 7220	Advanced Organic Chemistry III	3
PYPS 7230	Advanced Medicinal Chemistry I	3
PYPS 7240	Advanced Medicinal Chemistry II	3
PYPS 7250	Drug Action and Design	3
PYPS 7260	Separation Science	4
PYPS 7270	Mass Spectrometry of Organic Compounds	4
PYPS 7600	Heterocyclic Medicinal Chemistry	3
Total Hours		26

Pharmaceutics

PYPS 7010	Pharmacokinetics	4
PYPS 7030	Drug Products and Biopharmaceutics	4

PYPS 7040	Physical Pharmacy	4
Total Hours		12

Admission to candidacy requires successful completion of general written and oral examinations, which are taken after completing the course work.

Successful completion of doctor of philosophy degree requires, public presentation of dissertation research (Seminar), oral exam and dissertation defense administered by the dissertation committee and graduate school representative.

Pharmaceutical Sciences - PhD

The graduate program in pharmaceutical sciences offers the terminal degree of doctor of philosophy. The primary purpose of the program is to establish a functionally integrated research degree program leading to the doctor of philosophy with a major in the pharmaceutical sciences and specialization in one of the following disciplines: medicinal chemistry, pharmaceuticals, pharmacology-toxicology or pharmacy care systems. The interdepartmental program is administered jointly through the Departments of Pharmacal Sciences and Pharmacy Care Systems.

Pharmacy Care Systems - MS, PhD

The department offers graduate course work at the master's level in the fields of pharmacy care systems and health systems pharmacy. A doctor of philosophy in pharmaceutical sciences is offered through an interdepartmental program by the departments of Pharmacal Sciences and Pharmacy Care Systems.

The student pursuing the MS is expected to select either pharmacy care systems or health systems pharmacy. At least half of the student's work will be completed in the chosen field, including a thesis. The remainder may be selected in other pharmacy fields or may be taken in a related area outside of the James Harrison School of Pharmacy such as accounting and finance, computer sciences, economics, education, industrial engineering, industrial design, architecture, management, psychology, sociology and communication. The MS requires a minimum of 30 semester hours and a thesis. The thesis may be counted toward part of the semester hour requirement. A student may earn a maximum of six credit hours for the thesis.

The student pursuing the PhD will be expected to complete a minimum of 60 semester hours of course work in the chosen field of study. In addition, general examinations and a dissertation are required. A student must earn a minimum of 10 hours credit for the dissertation.

A bachelor's degree from an accredited college or university and satisfactory scores on the Graduate Record Examination are required. A pharmacy degree is preferred. There is no additional language requirement beyond verbal and written fluency in English.

Physics - MS, PhD

The Department of Physics offers the doctor of philosophy degree to students who have achieved a mastery of the fundamental laws of nature and demonstrated the ability to complete a research project that results in new knowledge in physics. All students complete the basic graduate level courses in Classical Mechanics, Electricity and Magnetism, Quantum Mechanics and Statistical Physics. They demonstrate their mastery of these subjects by passing a General Doctoral Examination that has both a written and an oral component. To increase their knowledge of a broad range of advanced physics topics and to develop expertise in their chosen area of focus, students complete at least 12 additional hours of graded course work with a minimum of nine at the 8000-level. The research project is usually undertaken in one of the research focuses of the Department - plasma physics, condensed matter and surface physics, atomic and molecular physics, space physics, and computational physics. It is completed with the defense of the student's dissertation. Students are also expected to publish their research in a refereed journal and/or present it at an appropriate professional meeting.

The master of science is also offered. Successful students complete the same basic graduate level courses as PhD students. Students electing the non-thesis option complete an additional 12 hours of graduate level course work. Students electing the thesis option complete at least an additional 6 hours of graduate level course work and at least 4 hours of thesis work. In addition to defending their thesis, they are encouraged to publish their results in a refereed journal or present them at a scientific meeting.

Plant Pathology - MAg, MS, PhD

The Department of Entomology and Plant Pathology offers plant pathology degrees including a Master of Science (MS), Master of Agriculture (MAg) and Doctor of Philosophy (PhD). The Graduate program emphasizes basic and applied aspects of the science of plant pathology preparing students for careers in teaching, research and extension with a variety of academic, governmental, state, private and industrial opportunities. The educational goals and objectives of the MS degree program are to produce graduates who are fundamentally trained in the scientific principles and general knowledge of plant pathology and related sciences and who are able to apply these principles to successfully solve problems and employ this knowledge at an advanced level of study. The purpose of the PhD program in plant pathology is to produce graduates who are fundamentally trained in the scientific principles and general knowledge of plant pathology and related sciences and who are able to employ this knowledge at the advanced level of study and apply these principles to solve problems involving plant diseases and associated pathogens.

Admission is based primarily on a combination of Grade Point Average (GPA) and Graduate Record Examination (GRE) scores and (if an international student) TOEFL tests are also required.

Students holding baccalaureate degrees in agriculture or the biological sciences may find this degree program helpful to their professional development and career goals. For a major in plant pathology at the MS level, the student should have a baccalaureate degree from a recognized institution with pre-requisite training in agriculture, biology, botany, microbiology and related fields such as chemistry, physics, and mathematics. Qualified students lacking mandatory courses may be admitted but will be required by the student's advisory committee to make up any deficiencies.

The MS program in plant pathology is available to qualified individuals who wish to pursue a master's level program that requires a thesis. Importance is placed on both classroom and research training. The MS requires a minimum of 30 semester hours, including:

PLPA 6200	Introductory Mycology	4
PLPA 7950	Seminar in Plant Pathology	1
Select two of the following:		4-7
PLPA 6400	Plant Virology	
PLPA 6500/6506	Plant Nematology	
PLPA 7300	Plant-Bacterial Interactions	
Total Hours		9-12

A graduate-level course in statistics is also required. A minimum of 21 semester hours must be taken in plant pathology and a specialty area may be selected from related subject matter fields. There is no language requirement for the MS degree. In addition to the required course work, the student must complete research, a written thesis and a thesis defense examination as defined by the student's advisory committee.

The master of agriculture (MAg) program with a specialization in plant pathology is available to qualified applicants who wish to pursue a master's level program that does not require a thesis. The MAg with a specialization in plant pathology carries the same entrance requirements as the MS but is a non-thesis degree. The MAg requires a minimum of 32 semester hours, 21 of which must be in plant pathology, including:

PLPA 6200	Introductory Mycology	4
Select two of the following:		6-7
PLPA 6400	Plant Virology (Core Course)	
PLPA 6500/6506	Plant Nematology	
PLPA 7300	Plant-Bacterial Interactions (Core Course)	
A course in statistics (strongly recommended)		
PLPA 7950	Seminar in Plant Pathology (strongly recommended)	1

The remainder of credit hours can be taken from a variety of subject areas determined in consultation with the student's advisory committee. A comprehensive examination is required after all courses are completed. There is no language requirement for the MAg degree.

The PhD program requires 60 semester hours of course work, including:

PLPA 6200	Introductory Mycology	4
PLPA 6400	Plant Virology	3
PLPA 6500/6506	Plant Nematology	4
PLPA 7300	Plant-Bacterial Interactions	4
PLPA 8950	Seminar	1
Graduate-level course in statistics		

Of the 60 semester hours, 30 must be graded graduate courses 6000-level and taken at Auburn University. There is no language requirement for the PhD. Upon completion of the course work, PhD students must take a general written examination. Students must pass all parts of the written examination before scheduling the preliminary oral examination (referred to as the PhD prelim exam). After satisfactory completion of the prelim exam the student advances to candidacy. The PhD student will conduct independent research and prepare a dissertation through the guidance and direction of an advisory committee. After completion of the dissertation, the student must pass a final oral examination defending the dissertation.

Polymer and Fiber Engineering - MS, PhD

Graduate study in the Department of Polymer and Fiber Engineering leads to Master of Science, and Doctor of Philosophy degrees. GRE and (if an international student) TOEFL scores of all applicants are reviewed by the departmental Graduate Committee. Applicants must hold a bachelor's degree in polymer engineering, fiber engineering, materials engineering/science, chemical engineering or related subject area.

Students in the MS program enroll in course work covering core courses in polymer chemistry, polymer processing, structure and properties of polymers, and polymer characterization. They further enroll in specialized courses beneficial to their research, such as mechanics of flexible structures, composite materials, biopolymers, and fiber and film formation. Both thesis and non-thesis options are offered. The thesis option requires a minimum of 30 hours of graduate courses plus thesis. The non-thesis option requires 36 hours and a graduate project.

The PhD in Polymer and Fiber Engineering requires a minimum of 60 hours of graduate courses including a minimum of 10 hours of PFEN 8990 Research and Dissertation. The student must enroll in a set of core courses and pass a written qualifying exam. After successfully presenting a dissertation research proposal to the student's graduate committee, the student becomes a candidate for the Doctor of Philosophy degree and may proceed with the dissertation research. Graduate teaching and research assistantships are available. There is no language requirement for the MS or PhD.

Poultry Science - MAg, MS, PhD

The Department of Poultry Science offers graduate programs in Poultry Science, leading to Master of Agriculture, Master of Science, and Doctor of Philosophy degrees. These degrees are designed to prepare outstanding students for careers in the commercial poultry industry, allied industries, government, and academia. Research training and experience can be acquired in the specialized areas of poultry management, poultry nutrition, poultry health (parasitology, pathology, virology), poultry physiology, processing and product technology, and food safety.

Applicants must indicate which graduate degree they wish to pursue in Poultry Science. All applications are reviewed by the departmental Graduate Committee. Application materials include: official copies of all college transcripts, GRE scores, TOEFL scores (for international students), 3 letters of recommendation, a resume, and a statement of purpose. For graduate studies leading to MS or MAg degrees, applicants must have a bachelor's degree in poultry science, animal science, or the biological sciences from a recognized institution. To be considered for the PhD program, applicants must have a MS degree in an appropriate field. The course of study, developed by the student and the advisory committee, may include additional courses to address specific needs or course work deficiencies.

Additional information about the departmental requirements, policies and availability of financial support can be obtained by contacting the graduate program officer.

MS/MAg Degree Requirements

1. The Master of Science (MS degree) requires a research project with a formal written thesis while the Master of Agriculture (MAg) requires a research project with a written report. The MS degree requires a minimum of 30 semester credit hours while the MAg requires a minimum of 33 semester credit hours. Both degrees require a comprehensive final oral examination.

2. Curriculum – Courses are selected in conjunction with the major professor and advisory committee to address the area of emphasis. All students are required to take 2 credits of POUL 7950, a course in statistics, and 4 credits of POUL 7990 or POUL 7980.

PhD Degree Requirements

1. For the PhD degree, a minimum of 30 semester hours of graduate coursework beyond the MS (60 hours beyond the bachelor's degree) is required.
2. Curriculum – Courses are selected in conjunction with the major professor and advisory committee to address the area of emphasis. All students are required to take 3 credits of POUL 7950, a minimum of one course in statistics, and at least 10 credits of POUL 8990.
3. Examinations – Upon completion of course work, students must pass general written examinations administered by the advisory committee, followed by a comprehensive preliminary oral examination. After satisfactory completion of these exams, the student advances to candidacy. A dissertation based on an independent research project is required to earn a PhD degree. After completion of the dissertation, the student must pass a final Doctoral oral examination defending the dissertation.

Psychology - MS, PhD

The Department of Psychology offers a Master of Science in Applied Behavior Analysis in Developmental Disabilities (ABA) and PhDs in three areas—a PhD in Clinical Psychology, a PhD in Cognitive and Behavioral Sciences (CaBS), and a PhD in Industrial/Organizational Psychology (I/O). Although an MS degree is conferred upon students in the doctoral programs when they have fulfilled intermediate requirements for the PhD, the department does not offer terminal master's degrees in these three areas.

Applicants should visit the department's webpage (www.auburn.edu/psychology), email bryangt@auburn.edu, or call (334) 844-6471 for application and general program information.

For the most accurate and up-to-date information about the program requirements, please consult our website at <http://www.cla.auburn.edu/psychology/graduate-studies/>.

Graduate degrees in Counseling, Counseling Psychology, Educational Psychology, and School Psychology are offered through the College of Education.

Admission Requirements for the MS and the PhD

Holders of the bachelor's degree in any discipline from an accredited institution will be considered for graduate work in psychology. Students are admitted to programs to begin fall term only.

To be considered for admission, potential applicants must submit the application materials listed below. The manner in which these are to be submitted and the deadlines for submitting them are subject to change, so it is imperative that students consult the application instructions on the Department of Psychology's web page for up-to-date directions. For PhD programs, see <http://www.cla.auburn.edu/psychology/clinical/application-instructions/>. For the MS in Applied Behavior Analysis, see <http://www.cla.auburn.edu/psychology/aba/application-information/>.

Items required are:

- Official scores for the General Test of the GRE (We do not require the Subject test.)
- Official transcripts from each college or university attended
- Department of Psychology application form
- Three letters of recommendation
- A statement of intent
- For international applicants, TOEFL/TSE scores

To ensure consideration, the application process should be completed by December 1 for the Clinical Psychology PhD program, January 15 for the CaBS and I/O PhD programs, and February 1 for the MS in ABA.

GRE and GPA profiles/expectations for successful applicants appear on each program's website, accessible through the department's webpage. Students seeking exemption from a departmental requirement based on completion of similar graduate work elsewhere

should discuss this possibility with departmental faculty after enrolling. Where appropriate, the faculty will determine whether earlier graduate work, including theses, may be substituted for Auburn departmental requirements.

MS in Applied Behavior Analysis in Developmental Disabilities

In the ABA program, students are trained to provide clinical and educational services to individuals with mental retardation and autism spectrum disorders, to typically developing children in school settings, and to families. Degree requirements focus on integrating course work with practicum training, and both components are approved by the Behavior Analyst Certification Board, Inc.

General Requirements

The MS in ABA is a full-time non-thesis program requiring three consecutive semesters (12 months) of full-time coursework (24 semester hours) and practicum training (18 semester hours). All students complete a professional portfolio with an oral defense of the portfolio as a capstone project. Course and credit-hour requirements for the program total 42 hours.

Required Courses

PSYC 6620	Behavioral Pharmacology	3
PSYC 7220	Behavioral Principles	3
PSYC 7240	Methods for Studying Individual Behavior	3
PSYC 7260	Ethical and Professional Issues in Behavior Analysis	3
PSYC 7310	Autism and Intellectual Disabilities	3
PSYC 7910	Practicum in Applied Psychology	6
PSYC 7910A	Practicum	
PSYC 7980	Applied Behavior Analysis Capstone Project	6
PSYC 8540	Behaviorism	3
PSYC 8550	Applied Behavior Analysis	3
PSYC 8570	Applied Behavior Analysis 2	3

PhD in Clinical Psychology

The Clinical Psychology PhD program uses a scientist-practitioner training model that blends basic and applied research with clinical practice.

General Requirements

Typically, the program requires five years at Auburn in course work, individualized research, and practicum experiences. In addition, a one-year full-time internship at an APA-approved program is required. 91 credit hours total are required.

Students enrolled in the Clinical Psychology PhD program complete a sequence of departmental core courses providing a foundation in psychology on which specialization is based. In doctoral study, students are expected to write and defend an empirically based master's thesis. Admission to doctoral candidacy is contingent upon the successful completion of the general doctoral examination. Students must also write and defend a research dissertation.

Required Courses

PSYC 7100	History of Ideas Psychology	3
PSYC 7110	Ethics and Problems of Scientific and Professional Psychology	1
PSYC 7120	Teaching of Psychology	2
PSYC 7120A	Teaching of Psychology	2
PSYC 7130	Research Seminar in Psychology	1
PSYC 7150	Biological Psychology	3
PSYC 7160	Human Development	3
PSYC 7180	Social Psychology	3
PSYC 7250	Clinical Research Methods and Ethics	3
PSYC 7270	Experimental Design in Psychology	4
PSYC 7990	Research and Thesis	4
PSYC 8300	Developmental Psychopathology	3

PSYC 8310	Introduction to Clinical Ethics and Methods	3
PSYC 8330	Cognitive Behavior Therapy	3
PSYC 8360	Assessment of Cognitive Abilities and Achievement	3
PSYC 8370	Behavioral and Psychological Assessment	3
PSYC 8480	Advanced Professional and Ethical Issues in Clinical Psychology	3
PSYC 8910	Clinical Practicum	18
PSYC 8990	Research and Dissertation	10
COUN 7330	Counseling Diverse Populations	3
STAT 7000	Experimental Statistics I	4
Either PSYC 7140 Learning and Conditioning or PSYC 7190 Cognitive Psychology		3

In addition, students take 6 credit hours of elective courses.

PhD in Cognitive and Behavioral Sciences

The CaBS program provides a firm foundation in cognitive and behavioral sciences. Electives allow students in the CaBS PhD program flexibility in developing their own areas of specialization. Practicum placements provide opportunities to gain research and applied experience.

General Requirements

Like the students in the PhD program in Clinical Psychology, CaBS students are required to complete a series of core courses, write and defend an empirically based master's thesis, and successfully complete a general doctoral examination before being admitted to doctoral candidacy. They must also write and defend a research dissertation. 60 credit hours total are required.

Required Courses

PSYC 7100	History of Ideas Psychology	3
PSYC 7110	Ethics and Problems of Scientific and Professional Psychology	1
PSYC 7120	Teaching of Psychology	2
PSYC 7120 A	Teaching of Psychology	2
PSYC 7130	Research Seminar in Psychology	1
PSYC 7140	Learning and Conditioning	3
PSYC 7150	Biological Psychology	3
PSYC 7160	Human Development	3
PSYC 7190	Cognitive Psychology	3
PSYC 7270	Experimental Design in Psychology	4
PSYC 8500	Experimental Analysis of Behavior Seminar	1
PSYC 7990	Research and Thesis	4
PSYC 8990	Research and Dissertation	10
STAT 7000	Experimental Statistics I	4

An additional 16 credit hours of graduate-level course work approved by the student's research committee is required.

PhD in Industrial/Organizational Psychology

The I/O PhD program prepares students for academic, research, and/or applied settings. Like students enrolled in the CaBS PhD program, students in the I/O program have flexibility in developing their areas of specialization and practicum placements.

General Requirements

Students in the I/O PhD program must complete the same requirements as those in the other two PhD programs; that is, they complete their course work, write and defend an empirically based master's thesis, and successfully complete a general doctoral examination before being admitted to doctoral candidacy. They must also write and defend a research dissertation. The degree requires a total of 80 semester hours of credit.

Required Courses

PSYC 7100	History of Ideas Psychology	3
PSYC 7110	Ethics and Problems of Scientific and Professional Psychology	1
PSYC 7120	Teaching of Psychology	2
PSYC 7120A	Teaching of Psychology	2
PSYC 7130	Research Seminar in Psychology	1
PSYC 7270	Experimental Design in Psychology	4
PSYC 7990	Research and Thesis	4
STAT 7000	Experimental Statistics I	4
PSYC 8700	Advanced Industrial Psychology	3
PSYC 8710	Advanced Organizational Psychology	3
PSYC 8750	Professional Issues in I/O Psychology	1
PSYC 8990	Research and Dissertation	10
Select three of the following:		9
PSYC 7140	Learning and Conditioning	
PSYC 7150	Biological Psychology	
PSYC 7160	Human Development	
PSYC 7170	Theories of Personality	
PSYC 7180	Social Psychology	
PSYC 7190	Cognitive Psychology	
Select one of the following:		3
PSYC 7230	Psychometric Theory	
PSYC 7240	Methods for Studying Individual Behavior	
PSYC 7250	Clinical Research Methods and Ethics	
PSYC 8250	Multivariate Methods	
PSYC 8970	Special Topics	
2 graduate-level courses in industrial psychology approved by the student's research committee		6
2 graduate-level courses in organizational psychology approved by the student's research committee		6
2 graduate-level courses in quantitative analysis approved by the student's research committee		6
4 graduate-level courses in industrial/organizational psychology approved by the student's research committee		12

Public Administration and Public Policy - MPA, PhD, Graduate Certificates

- MPA
- PhD
- Graduate Certificates

The Department of Political Science offers the Master of Public Administration (MPA), and the PhD in Public Administration and Public Policy is offered jointly by the Auburn University Department of Political Science and the Auburn University at Montgomery Department of Political Science and Public Administration. Graduates from the MPA program are employed as managers, planners, and directors in city, state, and local government agencies and federal government programs; they also serve as program officers, development directors, executive directors, and senior administrators in local and national nonprofit organizations. The Department of Political Science also offers two graduate certificates: Graduate Certificate in NonProfit Organizations and Community Governance and Graduate Certificate in Elections Administration.

For more information about the MPA program, see <http://www.cla.auburn.edu/polisci/graduate-programs/mpa/>.

For more information about the PhD program, see <http://www.cla.auburn.edu/polisci/graduate-programs/phd-in-public-administration-and-public-policy/>.

Master of Public Administration

The Department of Political Science offers the MPA. It is a professional degree program for leadership in public service at all levels of government as well as in nonprofit organizations. The program is accredited by the National Association of Schools of Public Affairs and Administration. Highly qualified students may pursue concurrently the Master of Community Planning.

Application Process

Applicants for the MPA must have a bachelor's degree or its equivalent from an accredited college or university. The General Test of the Graduate Record Examination is required. The admissions committee will evaluate the undergraduate transcripts, GRE scores, letters of recommendation, a writing sample, and any public sector experience in government agencies or nonprofit organizations. The program is not limited to political science majors, but successful applicants who have little background in public sector institutions and processes may be required to take additional courses.

Applicants should ensure these materials are sent to the Graduate School web application:

- Official scores from the General Test of the GRE
- Official transcripts from every institution attended
- Other information listed in the application

Web applications are located at: <https://fp.auburn.edu/gradschl/gwaap/Default.aspx>.

Applicants should ensure these materials are sent to the graduate program officer for the MPA program in the Department of Political Science:

- Personal statement of purpose in pursuing the MPA degree
- Three letters of professional or academic recommendation
- Writing sample

Send materials to:

MPA Program Administrator
Masters of Public Administration Program
Department of Political Science
8030 Haley Center
Auburn University, AL 36849
Telephone inquiries, call 334.844.5371

Degree Requirements

Students have to comply with four prerequisites to be considered for the MPA program. Once they are admitted, the program requires 42 semester hours and a portfolio. Eight core courses for a total of 24 hours credit are required of all students. Students take an additional 12 hours of electives in either public administration, broadly conceived, or an approved concentration in a related administrative field or policy area. The final 6 credit hours consist of either an administrative internship in a governmental agency or nonprofit organization or participation in a research project pertaining to the public sector. Students without substantial public sector experience will complete an internship, while those who have prior experience will likely complete a research project and paper.

Details about the requirements are provided below.

Prerequisites

Competency	Measure
English	Verbal GRE of at least 150, writing sample, or a course in advanced composition
Math	Quantitative GRE of at least 141 or course in college mathematics
United States Government	Undergraduate course or experience
Economics	Undergraduate course
Microcomputer applications	Undergraduate course or demonstrated competence

Students who have not satisfied these competencies before they enter the program may take them concurrently with MPA courses. It is important to complete the prerequisites as soon as possible to gain full benefit of the regular MPA courses.

Core Curriculum (24 Hours)

POLI 7000	Research Methods	3
POLI 7140	Public Budgeting	3
POLI 7150	Public Personnel Administration	3
POLI 7260	Organizational Theory and Administrative Behavior	3
POLI 7330	Seminar in Administrative Leadership, Responsibility, and Democratic Government	3
POLI 7350	Seminar in Public Administration	3
POLI 7360	Seminar in Policy and Administration	3
POLI 7520	Program Evaluation	3

Practical Experience through Internship or Applied Research Project (6 hours)

The program requires a total of 6 credit hours of internship and/or applied research. Students without significant prior public sector experience take an internship (). Students with direct experience with government agencies or nonprofit organizations will likely complete an approved research project (POLI 7930 MPA Research Project), although they may take an internship with the approval of the MPA director. Students may also design a combined internship and research project with the approval of the MPA director.

Electives (12 hours)

The MPA requires 12 credits of electives. This requirement may be fulfilled in any one of the three following ways:

- By taking 12 credits of classes approved by the MPA director that support the generalist public administration curriculum
- By completing the Dual MPAMCP Degree with Community Planning
- By completing one of the following two formal specializations: Graduate Certificate in Elections Administration or Graduate Certificate in Non-Profit Organizations and Community Governance

Portfolio

Successful completion of the degree includes preparation and presentation of the MPA Portfolio to MPA core faculty. The MPA Portfolio demonstrates mastery of the competencies established by the National Association of Schools of Public Affairs and Administration.

The MPA Portfolio reviews are scheduled typically in the final semester of course work. Students who do not pass the MPA Portfolio review have one additional opportunity to present their material to MPA faculty in the following fall or spring semester.

PhD in Public Administration and Public Policy

The PhD in Public Administration and Public Policy is offered jointly by Auburn University's Department of Political Science and Auburn University at Montgomery's Department of Political Science and Public Administration. Only students with master's degrees from accredited universities or colleges will be considered for the AU/AUM joint PhD program. Applicants having an insufficient background in public administration and public policy may be required to take additional prerequisite courses as determined by the admissions committee.

Application Process

Applicants must submit transcripts, a CV or resume, a statement of purpose, letters of recommendation, and GRE scores. Normally, scores of approximately 150 on the verbal, 150 on the quantitative, and 4.5 on the writing sections of the GRE are expected for admission.

Applicants should ensure these materials are sent to the Graduate School web application:

- Official scores from the General Test of the GRE
- Official transcripts from every institution attended

Applicants should ensure these materials are sent to the PhD administrators in the Department of Political Science:

- CV or resume
- Three letters of recommendation
- Statement of purpose

For more information, see the website for the PhD in Public Administration.

Requirements

The PhD curriculum includes core courses, a research methodology sequence, the student's choice of either the Public Administration or Public Policy track, and a series of electives where students develop expertise in chosen area of specialization. Details about the requirements for both tracks are given below.

Core Courses

All students in the program take the core courses in Public Administration and Public Policy.

Research Methodology Courses

Students will take a three-course methodology sequence covering a broad scope of political inquiry, research design, qualitative methods, and quantitative analysis. Students must earn a grade of A or B in each of the methodology courses before they can progress to the general comprehensive exams.

Tracks

The PhD program has two tracks, Public Administration and Public Policy. Students are required to take at least three courses within the track they choose. For the Public Administration track, required courses are as follows: public finance, human resource management, and organizational theory. For the Policy track, students should choose three of the following five courses: American politics and public policy, comparative politics and public policy, international relations and public policy, political theory and public policy, and public law and public policy.

Electives

The other five courses are chosen in consultation with the student's advisory committee. These electives should help the student develop expertise in a particular area of specialization.

Minimum Credit Requirements

Hours of formal PhD course work	39
Minimum hours of formal course work at each campus	9
Hours of dissertation credit	10
Total hours for PhD course work	49
Hours needed past bachelor's degree	75

Comprehensive Exams, Oral Exams, and Dissertation Defense

During the spring or fall semester after the course work is completed, students take comprehensive exams administered by the department. The exams will consist of sections testing core and track knowledge as well as one section focusing on students' areas of specialization. Students will have two opportunities to pass the comprehensive exams and must pass each written examination before scheduling the oral examination. Upon successful completion of the comprehensive exams, students should prepare a prospectus to present to their dissertation committee during their oral examinations. Admission to doctoral candidacy is contingent upon successful completion of all elements of the written and oral doctoral exams. After completion of the dissertation, the students must pass a final oral examination defending their dissertation work before their committee and a University Reader approved by the Graduate School.

Graduate Certificates

Two graduate certificates are offered in public administration and public policy: Graduate Certificate in Elections Administration and Graduate Certificate in NonProfit Organizations and Community Governance.

Application Process

Applications for graduate certificates include the same items as applications for the MPA degree with the exception that GRE scores are not required.

Applicants should ensure these materials are sent to the Graduate School web application:

- Official transcripts from every institution attended
- Other information listed in the application

Graduate Certificate in Elections Administration

Required Classes

These courses are required for the Graduate Certificate in Elections Administration. Corresponding 5000-level classes taken as an undergraduate fulfill the graduate certificate requirement but do not count toward the 42 graduate credits needed for the MPA. Substitutions require permission of MPA Director.

POLI 6150	Intergovernmental Relations and Federalism	3
POLI 6170	Election Law	3
POLI 6270	Election Administration	3
Select two courses from the list below:		6
COMP 7970	Special Topics	
POLI 6180	Administrative Law	
POLI 6340	Theory and Practice of Mediation	
POLI 6370	Nonprofit Management	
POLI 7050	State Politics	
POLI 7330	Seminar in Administrative Leadership, Responsibility, and Democratic Government	

Graduate Certificate in NonProfit Organizations and Community Governance

Required Classes

These courses are required for the Graduate Certificate in NonProfit Organizations and Community Governance. Corresponding 5000-level classes taken as an undergraduate fulfill the graduate certificate requirement but do not count toward the 42 graduate credits needed for the MPA. Substitutions require permission of MPA Director.

POLI 6370	Nonprofit Management	3
POLI 6550	Issues in Public Administration	1-3
POLI 7920	MPA Internship	3-6
or POLI 7930	MPA Research Project	
Select two courses from the list below:		6
POLI 6180	Administrative Law	
POLI 6340	Theory and Practice of Mediation	
POLI 7050	State Politics	
POLI 7330	Seminar in Administrative Leadership, Responsibility, and Democratic Government	
POLI 7520	Program Evaluation	

Real Estate Development - MRED

The Auburn University Executive Master of Real Estate Development (AUMRED) program is an executive graduate degree offered jointly by the College of Architecture, Design and Construction and the College of Business. The program emphasizes best development practices related to environmental sustainability, economic resilience, social responsibility, financial feasibility and design excellence. It provides a targeted understanding of multiple disciplines that puts students at an advantage in their real estate development careers. The program is entrepreneurially and industry focused, designed for practicing professionals with a minimum of three to five years in real estate development or related fields (real estate or mortgage brokerage, architecture, landscape architecture, community planning and building construction, for example). It combines short, intense on-campus residencies with distance modules and four-day field trips to nationally and internationally significant cities and development projects each semester. The curriculum consists of 39 credit hours that are delivered over a two-year/six semester period.

Information concerning specific program requirements may be obtained by visiting www.business.auburn.edu.

First Year

Summer	Hours Fall	Hours Spring	Hours
RDEV 7126 Field Studies	1 RDEV 7126 Field Studies	1 RDEV 7126 Field Studies	1

RDEV 7136 Principles of Real Estate Development	3 RDEV 7236 Real Estate Market Analysis	3 RDEV 7346 Site Planning and Infrastructure Development	3
RDEV 7146 Real Property Analysis	3 RDEV 7246 Building Design and Construction Principles	3 RDEV 7356 Real Estate Investment Analysis	3
	7	7	7

Second Year

Summer	Hours Fall	Hours Spring	Hours
RDEV 7126 Field Studies	1 RDEV 7126 Field Studies	1 RDEV 7126 Field Studies	1
RDEV 7436 Real Estate Project Management	3 RDEV 7536 Real Estate Securitization	3 RDEV 7636 Real Estate Development Capstone Project	5
RDEV 7446 Real Estate Contract Negotiations	1 RDEV 7546 Real Estate Development Law	3	
	5	7	6

Total Hours: 39

Rehabilitation and Special Education - MEd, MS, PhD

Degree Programs

- Rehabilitation Counseling (<http://education.auburn.edu/programs/rco>) – MEd/MS (distance option available)
- Rehabilitation and Special Education (<http://education.auburn.edu/programs/rss>) - PhD
- Special Education: Early Childhood Special Education (<http://education.auburn.edu/programs/rse>) (birth through age 8) MEd/MS (alternative and traditional; distance options available for MEd alternative and traditional)
- Special Education: Collaborative Teacher (<http://education.auburn.edu/programs/rsc>) (grades K-6 and/or 6-12) -MEd/MS (alternative and traditional; distance options available for MEd alternative and traditional)

Graduate certificate

- Rehabilitation Leadership and Management (http://education.auburn.edu/programs/certs_minors/rmgt.html)

Rehabilitation and special education programs include graduate certificates and graduate degree programs leading to the master of education (non-thesis option), master of science (thesis option), and doctor of philosophy. Special education programs at the master's level include both alternative and traditional routes. Alternative master's programs offer qualified students who hold non-teaching baccalaureate degrees a route to initial teacher certification while simultaneously earning a master's degree; traditional master's programs offer advanced study for individuals who hold a bachelor's level professional educator certification. Admission to departmental graduate programs is competitive, based on past achievement, scholarship potential, and professionalism.

Master's degree programs (MEd/MS)

Applicants to master's degree programs must satisfy the Graduate School's admission requirements. Departmental admission requirements include a GPA of at least 2.75 on all undergraduate coursework, Graduate Record Examination (GRE) scores, completed application forms, three letters of recommendation, and departmental approval.

Special education master's programs which include options in early childhood special education (birth through age 8) and collaborative teacher (grades K-6 and/or 6-12) are approved by the Alabama State Board of Education. The College of Education is accredited by the National Council for Accreditation of Teacher Education (NCATE). In addition to the admission requirements noted above, individuals applying to these programs must meet all admission requirements established by the Alabama State Board of Education including documentation of a clear background check through the Alabama Bureau of Investigation. State admission requirements for alternative master's special education programs also include submission of passing scores on the following components of the Alabama Prospective Teacher Testing Program: Basic Skills Assessments (Applied Mathematics, Reading for Information, and Writing) AND Praxis II subject assessment, 0014/5014 Elementary Education Content Knowledge. State admission requirements for traditional master's special education programs include a valid bachelor's level professional educator certificate and may include additional tests required by the State code.

Degree requirements for master's level special education programs include a minimum of 30-57 semester hours depending on prior certification, three 120-hour practica, and a comprehensive exam. Students may select a thesis (MS) or non-thesis (MEd) option. Additionally, alternative master's students complete a semester-long, full-time internship. A passing score on the Praxis II subject assessment, 0354/5354 Special Education: Core Knowledge and Application is required of alternative master's students and traditional master's students with prior certification in an area other than special education. Alternative master's programs typically take a minimum of four to five semesters to complete if enrolled full-time.

Individuals completing State-approved master's level certification programs are eligible to apply for Alabama Class A (master's level) certification. Individuals seeking certification in states other than Alabama are responsible for contacting those state certification offices to obtain their application form and requirements. The State of Alabama signs the National Association of State Directors of Education and Certification (NASDTEC) Interstate Agreement which facilitates the applications of program graduates when they apply for certification in other states.

The master's program in rehabilitation counseling is accredited by the Council on Rehabilitation Education and provides students with the necessary academic coursework and clinical experiences to sit for the Certified Rehabilitation Counselor (CRC) examination. The program provides the opportunity through elective coursework to specialize in vocational evaluation. The rehabilitation counseling program requires a 100 hour practicum taken early in the program and 600 hours of supervised clinical practice generally taken at the end of the program. The thesis option requires 64 semester hours of coursework while the non-thesis program is 60 semester hours and requires the student to successfully pass a written comprehensive examination.

Doctoral degree program (PhD)

Applicants to the PhD program in rehabilitation and special education must satisfy the Graduate School's admission requirements. Program requirements include competitive graduate GPA and Graduate Record Examination (GRE) scores, completed application form, three letters of recommendation, a current resume, a professional mission statement and departmental approval. Special education applicants must have completed three years of direct teaching of students with disabilities. Rehabilitation applicants must be eligible to sit for the CRC.

The doctoral program includes 15 hours of research courses and 9 hours of educational foundations (e.g., historical, psychological, philosophical, sociological). The remaining coursework is made up of doctoral "core" and support area coursework. A minimum of 48 semester hours beyond the master's degree, excluding the dissertation hours, is needed to complete the program. Prior to submitting a research proposal for the dissertation, all doctoral students must satisfactorily complete a qualifying paper and a general written and oral examination. Doctoral students must register for at least 10 semester hours of doctoral research while completing a dissertation. Typically the program takes a minimum of three year to complete (two years of coursework and one year of independent research).

Graduate certificate

A graduate certificate is offered in rehabilitation leadership and management.

Additional information

Detailed admission and program requirements for the department's multiple areas of graduate study can be accessed at Academic Programs (<http://www.education.auburn.edu/programs/degreeoption.html>) on the College of Education's website.

Sociology - MS, MA

The interdepartmental graduate program in sociology offers study and research leading to the degrees of Master of Arts or Master of Science in Sociology and in Rural Sociology. Anthropologists, social work faculty, rural sociologists, and sociologists make up the faculty. The program is administered by a three-member coordinating committee from the Department of Agricultural Economics and Rural Sociology, the Department of Sociology, Anthropology, and Social Work, and the Department of Sociology at Auburn University at Montgomery. Information about the two degrees is available at <http://www.cla.auburn.edu/sociology/sociology-program/graduates/the-interdepartmental-masters-program/>.

Admission Requirements

Admission to the program is administered by co-directors representing the Department of Sociology, Anthropology & Social Work and the Department of Agricultural Economics & Rural Sociology on the Auburn campus and the Department of Sociology at Auburn University-Montgomery. Applicants are required to have a bachelor's degree from an accredited institution and generally are required to have a minimum GRE score of 290 (150 V and 140 Q) and a GPA of 3.0 on all completed coursework. The applicant's resume and letters of recommendation also are considered in making a decision on admission.

Applicants should ensure the following materials are submitted to the Graduate School web application:

- Official scores from the General Test of the GRE
- Official transcripts from every college and university attended
- If an international student, the official score from the TOEFL exam

Applicants should ensure that the following materials are submitted to the graduate program officer in the Department of Sociology, Anthropology, and Social Work:

- Statement of interest
- Three letters of recommendation

Applications to the program are reviewed year round.

The program's coordinating committee will evaluate each applicant's dossier.

Thesis and Non-Thesis Options

Thesis and non-thesis options are available for both the MA and the MS. These two degree options are designed to serve the needs of differing types of students. The thesis option is recommended for students who might be interested in pursuing advanced graduate work and who are interested in gaining research experience. The non-thesis option is designed for individuals who are in mid-career, who wish to learn new skills in order to be more productive professionally, and who have no intent on pursuing a more advanced graduate degree.

The thesis option requires a minimum of 30 semester hours, with 6 semester hours of this total being for research and thesis (SOCY 7990 Research and Thesis or RSOC 7990 Research and Thesis). The non-thesis option requires 36 semester hours of course credit. Additionally, a major paper is required for the non-thesis option.

Required Core Courses

All students take core graduate courses in social theory, social research methods, and statistics:

- SOCY 7000 Advanced Sociological Theory
- SOCY 7100 Statistical Analysis of Survey, Aggregate and Large Data Sources
- RSOC 7700 Methods of Social Research

Students without undergraduate course work in these areas may be required to take additional courses to prepare for the core graduate courses. Additional courses at the 6000-level and above are taken with the advice of the student's graduate advisory committee.

Financial Aid

A variable number of graduate teaching assistantships and graduate research assistantships are available on a competitive basis to support graduate students in the program. Strong preference is given to funding students pursuing the thesis option.

Admission to the program is determined collectively by the coordinating committee, but funding decisions are made by individual departments. To be considered for funding, applicants should send three letters of recommendation to the coordinating committee member in the appropriate department.

Most graduate teaching assistantships and graduate research assistantships require the commitment of 13-15 hours of work per week. Given these responsibilities, graduate students holding graduate teaching assistantships and graduate research assistantships are expected to take no more than 9 hours of graduate credit course work per semester. Experience indicates that a heavier course load leads to an erosion of performance both on the job and in the course work.

Graduate teaching positions are associated primarily with the Department of Sociology, Anthropology, and Social Work and involve working with faculty teaching in the undergraduate core curriculum. Students seeking graduate teaching assistantships should submit their completed applications by March 1 to be included in the review process regarding funding decisions for the following academic year. However, occasionally, funds for graduate teaching assistantships may become available later in the year, and applications are then reviewed accordingly.

Graduate research assistantships are associated primarily with the Department of Agricultural Economics and Rural Sociology and require working with faculty conducting research on a variety of topics dealing with rural development. Funding from grants becomes

available at different times of the year. The funds for graduate research assistantships generally are made available in February or March. Please contact the coordinating committee member from the Department of Agricultural Economics and Rural Sociology for further information on funding.

Spanish - MA, MHS

Graduate studies in Spanish lead to the Master of Arts (MA) in Spanish or the Master of Hispanic Studies (MHS). The Spanish graduate program is designed to prepare students for careers in teaching, business, government, world affairs, diplomacy, social service, and law enforcement and for doctoral studies in Spanish, with emphases such as literature, linguistics, or foreign language education. Students may begin their graduate studies at the beginning of any semester during the academic year.

Information about the MA and the MHS can be found at <http://www.cla.auburn.edu/forlang/spanish-graduate-program/>.

Admission Requirements

Candidates wishing to pursue the MA or the MHS must have a bachelor's degree from an accredited institution, with at least 38 semester hours of undergraduate Spanish course work above the freshman level and satisfactory scores on the General Test of the GRE. International students must have acceptable scores on the TOEFL. Applicants lacking course requirements need to make up deficiencies before admission to the graduate program.

Applicants should ensure that the following materials are sent to the Graduate School web application program:

- Official transcripts from every undergraduate institution attended
- Official scores from the General Test of the GRE sent from ETS (for domestic students; not required for international students)
- Official scores from the TOEFL (for international students)

They should send these materials to the graduate program officer in the Department of Foreign Languages and Literatures:

- Three letters of recommendation
- Graduate teaching assistantship application
- Writing sample. A writing sample in Spanish should be submitted to the Department of Foreign Languages and Literatures at the time of the application. The writing sample typically is a research paper completed for a course taken as an undergraduate, usually a paper written for a senior-level literature or civilization course. It should be a minimum of five pages, typed.
- Speaking samples. Two speaking samples are required, together equaling a clip of approximately 4-5 minutes in length. The first should be a 2-3 minute extemporaneous autobiography: who the applicant is, where the applicant is from, what the applicant's childhood was like, what a memorable event in the applicant's early life was, what got the applicant interested in studying Spanish, why the applicant wishes to pursue a master's degree in Spanish, what the applicant's plans are after finishing the degree. The second should be a reading from a printed text, for example, a poem, a paragraph or two from a novel or short story, a newspaper article. Applicants should identify the selection on the recording. This selection should be approximately 1-2 minutes in length. The speaking samples may be recorded using a computer recorder, such as Windows Sound Recorder (typically found in "Programs, Accessories, Entertainment, Sound Recorder") or other computer recording program. The sound file should be burned to a CD and mailed to the Department of Foreign Languages and Literatures or emailed to spgrad@auburn.edu.

All materials should be received by February 15.

Courses and Other Graduation Requirements

The MA requires at least 30 semester hours including 4 credit hours for thesis.

Candidates for the MHS must earn a minimum of 36 semester hours in their major, but no thesis is required. A concentration consisting of 6 semester hours of graduate-level courses in a related field or fields may be earned as part of the MHS degree. These 6 hours do not have to be taken in the Department of Foreign Languages and Literatures.

Both degrees require satisfactory performance on the comprehensive examinations.

A reading knowledge of one other foreign language is required. This knowledge may be demonstrated by earning a passing score on the foreign language proficiency test or by completing the first-year sequence (or equivalent) of the foreign language with a grade of B or better.

Financial Aid

Graduate teaching assistantships are available to qualified students. For more information, please contact the department.

All graduate teaching assistants are required to take FLSP 7090 Introduction to College Level Spanish Instruction. Credit from this course does not count toward the degree. For more information, check the student handbook available from the department.

Statistics - MS, MPS

The Department of Mathematics and Statistics offers degree programs leading to a master of science in statistics and a non-thesis master of probability and statistics. The master of science is designed to provide a suitable mix of theoretical and applied background for students interested in a career in statistics. The curriculum provides students with the necessary technical, analytical and interpretive skills required of professional statisticians while concentrating on education in the fundamentals of statistics and its interdisciplinary nature. Course offerings are structured to give students a variety of choices of specialization in order to pursue a career in academia, government or industry and/or further their pursuit of a PhD degree in statistics. For the MS degree the student must complete and defend a thesis and obtain a passing score on the related oral examination. The master of probability and statistics (MPS) is the non-thesis option in which students are required to complete a project that may involve statistical consulting, programming and/or data analysis. A PhD degree in mathematics with concentration in statistics is also available (see mathematics).

For those students whose graduate research includes a substantial amount of statistical methodology or data analysis, but who do not wish to pursue a degree, a graduate minor in statistics is available (see "Statistics" under "Graduate Minors").

Veterinary Clinical Sciences

(See Biomedical Sciences (p. 487))

Wildlife Sciences - MS, PhD

Wildlife Sciences graduate programs are available for both MS and PhD degrees. Admission requirements parallel those for Forestry graduate programs. In addition to meeting Graduate School admission requirements, applicants are evaluated and recommended for admission by the graduate faculty of the School of Forestry and Wildlife Sciences based on an examination of their scores on the Graduate Record Examination (GRE), TOEFL tests for international students, their previous academic record, experience, and recommendations. While the following are not absolutes, the faculty generally expect a minimum GPA of 3.0 in previous academic course work and minimum scores for both verbal and quantitative in the 50 percentile range for the GRE.

Degrees offered:

- **Master of Science (MS)** which requires a minimum of 30 hours beyond the bachelor degree at the graduate level, 21 hours of which must be in the major. A minimum of 4 but not more than 6 hours in Research and Thesis (WILD 7990) is required. All MS students are required to take Research Methods (FOR 7510) and Graduate Seminar (WILD 7950). A research proposal and thesis based on original research are major components of the MS degree.
- **Doctor of Philosophy (PhD)** degree requires 60 semester hours beyond the bachelor degree. There must be a minimum of 30 semester hours in graded coursework at the 7000-level or above. Of the remaining 30 semester hours, 10 hours must be Research and Dissertation (WILD 8990) and 20 hours of 6000-level or above. While some of these 60 hours can be from previous graduate work, such as a MS degree, a minimum of 18 hours of graded coursework at the 6000-level or above must be completed at Auburn. All PhD students are required to take Research Methods (FOR 7510) and Graduate Seminar (WILD 7950). A research proposal and dissertation based on original research are required as major components of the PhD degree program. Oral and written preliminary exams are required for advancement to candidacy and must be completed no less than two academic terms prior to graduation. The written and oral preliminary examinations for PhD students will normally consist of questions from each committee member regarding technical competency and other related issues.

Zoology

(See Biological Sciences (p. 487))
Interdepartmental Program

Graduate Minors

- Agricultural Economics (GMAE)
- Biochemistry and Cell/Molecular Biology (p. 548)
- Community Planning (p. 548)
- Ecology (p. 548)
- Economic Development (p. 549)
- Environmental Studies (p. 549)
- Golf Course Design (p. 549)
- Pathobiology - MS, PhD (p. 549)
- Plant Molecular Biology (p. 550)
- Sport Management (p. 550)
- Statistics (p. 550)
- Urban Forestry (p. 551)
- Women's Studies (p. 551)

Agricultural Economics (GMAE)

A Graduate Minor in Agricultural Economics (GMAE) is offered for nonmajors wishing to obtain training in the application of economic principles to problems affecting rural communities and households. The GMAE requires 12 credit hours of graduate-level coursework in agricultural economics (6 hours must be at the 7000 level or above). The student's graduate committee must include a faculty member from the agricultural economics department, and the student must demonstrate competence in the application of economic principles to problems in research. The latter requirement is typically met via a chapter or section in the student's thesis or dissertation.

Biochemistry and Cell/Molecular Biology

Auburn University offers a graduate minor in Cell and Molecular Biosciences, administered by the Graduate School with faculty from the Cell and Molecular Biosciences Program. The CMB minor requires a suitable background in biochemistry (BCHE 7200, BCHE 7210 or equivalent) and the successful completion of at least nine credits from the CMB graduate curriculum. The minor offers in-depth instruction in animal, microbial and plant and cell and molecular biology, and is specifically designed for MS/PhD students in life sciences and allied fields whose thesis or dissertation research will benefit from a broader perspective of cell and molecular biology and bioinformatics. See www.auburn.edu/cmb for more information.

Community Planning

The Community Planning minor is open to graduate students in Building Science and Landscape Architecture, and to others only by permission. This minor affords students with interests in planning, development and urban design the opportunity to explore the discipline. Students must complete 9 credit hours of Community Planning coursework and notify CADC Student Services that they are completing the Planning minor.

Ecology

Ecology is an academic minor administered by the Graduate School in cooperation with faculty and departments that participate in the Auburn University Ecology Group (<http://www.auburn.edu/academic/ecology>). The Ecology minor is open to graduate students whose thesis or dissertation research will benefit from a broader and enriched perspective in the fundamentals and applications of the ecological sciences. For more information, students should contact any of the following coordinators.

Agronomy and Soils, Wes Wood	Funchess 202
Animal Sciences, Russ Muntifering	Upchurch 108
Biological Sciences, Nanette Chadwick	Funchess 331
Entomology and Plant Pathology, Kira Bowen.....	Rouse 209
Fisheries and Allied Aquacultures, Dennis DeVries.....	Swingle 311

Forestry and Wildlife Sciences, Ed LoewensteinF&WS 4431

Economic Development

The economic development graduate minor provides a specialization in the theories and practice of economic development, primarily within the U.S and Alabama. It is an interdisciplinary minor offered by the faculty of participating departments (Agricultural Economics and Rural Sociology, Community Planning, Economics, and Political Science) and is administered by the Economic and Community Development Institute.

Students may attach the economic development graduate minor to their degrees in agricultural economics (MS and PhD), business administration (MBA), community planning (MCP), economics (MS), public administration (MPA), public administration and public policy (PhD), and rural sociology (MS). To earn the graduate minor, students must complete the program's basic course, Economic Development and Competition (POLI 7700), two elective courses selected from an approved list, and a one week non-credit economic development training course sponsored by the Economic and Community Development Institute. Contact the Economic and Community Development Institute for more information

Environmental Studies

This is an interdisciplinary academic minor administered by the Graduate School in cooperation with participating departments. It is open to any graduate student whose thesis or dissertation is in the environmental area. Participating departments include Aerospace Engineering, Agricultural Economics, Biosystems Engineering, Agronomy and Soils, Animal Sciences, Architecture, Biological Sciences, Chemical Engineering, Civil Engineering, Entomology, Fisheries and Allied Aquacultures, Forestry, Geography, Geology, Horticulture, Landscape Architecture, Pathobiology, Pharmacal Sciences, Physiology and Pharmacology, Plant Pathology, Psychology and Sociology.

Basic guidelines are:

1. The minor is open to any graduate student whose thesis or dissertation is environmentally oriented.
2. The student's department retains primary control over the student's program.
3. One committee member must be from outside the student's department and this member must be involved in environmental research.
4. Each student must take BIOL 3060, or the equivalent and RSOC 7650 (Natural Resources and the Environment) or an equivalent.
5. Each student must take at least three hours of environmental-related course work from outside the student's "broad group discipline."
6. Each student must take at least three hours of environmental-related course work from outside of the student's home department but with-in the student's "broad group discipline."
7. Each student must meet the degree requirements of the student's home department.
8. At the discretion of the student's advisory committee, graduate-level courses required for this program also may be counted towards the completion of other degree requirements.

For more information, contact Dr. Joe Touchton, Department of Agronomy and Soils, 202 Funchess Hall.

Golf Course Design

The graduate minor in Golf Course Design is open to graduate students in Landscape Architecture, Agronomy and Soils, and Landscape Horticulture, or others with permission. This minor provides students with additional coursework and field experience in landscape form and function for golf course construction. Specifically, the minor requires 19 credit hours in Landscape Architecture and Agronomy, including courses in Soil Resources and Conservation, Advanced Turfgrass Management, Landscape Construction, and Landscape Ecology. The minor is administered through the Department of Agronomy and Soils. For specific information students should contact Dr. Beth Guertal in Agronomy and Soils, eguertal@acesag.auburn.edu.

Pathobiology - MS, PhD

(See Biomedical Sciences (p. 487))

Plant Molecular Biology

Auburn University offers an academic minor in plant molecular biology administered by the Graduate School in cooperation with the participating Molecular and Cellular Biology faculty housed in the two departments listed below. The minor is open to graduate students enrolled in these departments whose thesis/dissertation research addresses related studies and who will benefit from broader training in molecular biology. For more information, contact the following department coordinators

Narendra Singh.....Biological Sciences

Fenny Dane.....Horticulture

Sport Management

The purpose of the sport management minor is to provide master's degree students with the specialized knowledge of the sport industry and to prepare those students to work in sport organizations as administrators and managers. The minor is administered by the Graduate School. Participating departments include Kinesiology and Educational Foundations, Leadership and Technology. Students selecting the minor must satisfy the degree requirements for the master's degree programs in Kinesiology and Educational Foundations, Leadership and Technology. The Sport Management Minor Committee oversees the program and certifies completion. Minimum requirements are 12 semester hours of graduate course work in sport management, as identified by the Committee, 6 of which must be beyond the minimum hour requirements for the master's degree. At least 6 hours must be approved coursework in sports studies. The student must also complete a minimum of 3 semester hours of work-related experience in sport management (e.g., a practicum course). For additional information, please contact the department head of the participating units.

Statistics

Auburn University offers a graduate academic minor in Statistics administered by the Graduate School in cooperation with the Statistics Coordinating Committee and the Department of Mathematics and Statistics. The objective of the minor is to provide education and training for students whose graduate research includes a substantial amount of statistical methodology and/or data analysis. Students are required to complete 12 hours of graduate level statistics course work and demonstrate the ability to apply statistical methodology to problems in research.

Statistics Coure Work

Select four of the following:		12
STAT 6110	Sas Programming and Applications	
STAT 6630	Sample Survey, Design and Analysis	3
STAT 7000	Experimental Statistics I	
STAT 7010	Experimental Statistics II	
STAT 7020	Regression Analysis	
STAT 7030	Categorical Data Analysis	
STAT 7040	Biostatistics	
STAT 7600	Statistical Theory and Methods I	
STAT 7610	Statistical Theory and Methods II	3
STAT 7700	Generalized Linear Models	
STAT 7780	Survival Analysis	
STAT 7840	Applied Multivariate Statistical Analysis	
STAT 7850	Theory of Statistical Inference	
STAT 7860	Applied Time Series Analysis	
Total Hours		18

Participants are required to have one committee member from outside the department who is a member of the Statistics Faculty. For more information, contact Dr. Mark Carpenter, Department of Mathematics and Statistics.

Urban Forestry

The Department of Horticulture (HORT) and the School of Forestry and Wildlife Sciences (SFWS) offer an Urban Forestry minor for graduate students. Urban Forestry is the design, establishment and maintenance of urban forests to enhance the economic value of cities and to provide a healthier environment for people. The minor promotes interdisciplinary studies and trains students for employment in the urban forestry arena. Auburn University, with its strengths in Horticulture, Forestry, Landscape Architecture, Community Planning and Agriculture and its proximity to major urban centers such as Atlanta, Birmingham, Columbus and Montgomery, offers a unique opportunity for urban forestry research and education.

To be eligible for the minor, students must be enrolled in the master of natural resources, master of agriculture, master of science or PhD degree program in HORT or SFWS. To complete the minor, students must:

1. Develop an advisory committee including faculty from both SFWS and HORT;
2. Complete a thesis/dissertation research project that pertains to urban forestry, or in the case of master of natural resources and master of agriculture degrees, complete an approved three-credit hour directed study in urban forestry;
3. Complete FORY 6650, HORT 7850 /FORY 7850 and at least one undergraduate or graduate course in tree identification.
4. Complete at least nine semester hours from a list of approved core courses, at least one of which must be outside of the home department or school.

For more information, contact the graduate program officer at the Department of Horticulture or the School of Forestry and Wildlife Sciences.

Women's Studies

The Women's Studies Program offers an interdisciplinary graduate minor in Women's Studies, open to any graduate student. The minor provides students with specific coursework in women's and gender studies and a teaching practicum that helps prepare them to teach an introductory women's studies course. The minor is recommended for students who seek positions in women's and/or gender studies departments or joint positions for which part of the responsibility is to women's and/or gender studies.

Students are required to complete 10 hours of graduate-level coursework, including WMST 6980 (Feminist Theory; 3 hours) and WMST 7910 (Teaching Practicum; 1 hour). Students fulfill the remaining hours with graduate courses cross-listed with Women's Studies; these must be from outside of the student's home department. See the Women's Studies Program website for a full listing of course offerings. <http://www.cla.auburn.edu/womensstudies/womens-studies-minor/graduate-curriculum/>

For more information, contact Dr. Joyce de Vries, director of the Women's Studies Program.

Graduate Faculty

The following is a list of full-time teaching Graduate faculty at Auburn University. The date indicates the year of first appointment to any position in the institution.

A

ABEBE-GEBREKIDAN, ASHEBER, Associate Professor, 2007, PhD Western Michigan, BS Addis Ababa (MATH)

ABELL, ELLEN E., Associate Professor, 1993, PhD MA Washington State, BA Illinois (HDFS)

ABERNETHY, AVERY M., Torchmark Professor and Chair, 1988, PhD South Carolina, BSBA North Carolina (MKTG)

ACEVEDO, ORLANDO, Assistant Professor, 2006, PhD Duquesne, BS Florida International (CHEM)

ACEVEDO, CHANTEL, Associate Professor, 2006, MFA BA Miami (ENGL)

ADAMS, JENNIFER W., Associate Professor, 2005, PhD MA South Carolina BS Ball State (CMJN)

ADAMS, GARRY, Associate Professor, 2003, PhD Florida State, MBA BS Southern Illinois (MNGT)

ADAMS III, OLIN L., Associate Professor, 2000, PhD Ohio, MBA Mount St. Mary's, AB Centre (EFLT)

ADANUR, SABIT, Professor, 1992, PhD MS North Carolina State, BS Istanbul Tech (PFEN)

ADHIKARI, SUSHIL, Associate Professor, 2008, PhD Mississippi State, MS Asian Institute of Technology, BS Tribhuvan (BSEN)

ADLER-BAEDER, FRANCESCA, Professor, 2001, PhD MS North Carolina-Greensboro BA Pembroke (HDFS)

AGNE, ROBERT, Associate Professor , 2004, PhD Colorado, MA BS Dayton (CMJN)

AGRAWAL, PRATHIMA, Ginn Distinguished Professor and Director, Wireless Engineering Research and Education Center, 2003, PhD Southern California, M.S. Rochester, M.E. B.E. Indian Institute of Technology (ELEC)

AGRAWAL, VISHWANI, James J. Danaher Professor, 2003, PhD Illinois-Urbana-Champaign, ME Indian Institute of Science, BE Roorkee (ELEC)

AHMED, ANWAR, Professor, 1998, PhD MS Wichita State, BS Peshawar (AERO)

AKINGBEMI, BENSON, Associate Professor, 2004, PhD MSc DVM Ibadan (VMAP)

ALBRECHT, ULRICH F., Professor, 1994, PhD New Mexico St., PhD Duisburg, MS B.S Essen. (MATH)

ALDERMAN, CHARLES W., Professor and Dean of Enrollment Management, 1977, DBA Tennessee, MBA BS Auburn (ACCT)

ALEXANDER, TONI, Associate Professor, 2004, PhD MA Louisiana State, BA Cal State-Stanislaus (GEOL)

ALL, ANITA, Professor, MSN PhD Northern Colorado, BSN Wyoming (NURS)

ALLEN, BRENDA M., Assistant Professor, 1978, PhD Auburn, MS BS Tuskegee (FOWS)

ALLEN, JOHN M., Assistant Clinical Professor, 2011, PharmD Florida A&M (PYPP)

ALLEY, KELLY D., Alumni Professor, 1991, PhD MA Wisconsin, BS Cornell (SOCY)

ALTINDAG, DUHA, Assistant Professor, 2011, PhD MS Louisiana State, BA Bogazici (ECON)

AMIN, RAJESH H., Assistant Professor, 2009, PhD MS BS Wayne State (PYPS)

ANDERSON, CHRIS, Assistant Professor , 2008, PhD, Ohio State Univ; MS, Univ South Florida; BS, Virginia Tech (FOWS)

ANDRUS, MIRANDA R., Associate Clinical Professor, 2000, Pharm.D Samford (PYPP)

ANDRZEJEWSKI, CAREY E., Associate Professor , 2008, PhD MA Ohio State, MA Texas Woman's, BS Berry (EFLT)

ANGARANO, DONNA W., Associate Dean and Professor, 1986, DVM BS Missouri (VBMS)

ANGARANO, DONNA W., Associate Dean and Professor, 1986, BS DVM Missouri (VMED)

ANGELO, ADRIENNE, Associate Professor, 2009, PhD Emory, BA Groucher (FLNG)

APPEL, ARTHUR G., Professor and Chair, 1985, PhD MS California-Riverside, BA UCLA (ENPL)

ARCEDIANO, FRANCISCO, Assistant Professor, 2008, PhD ABDBA Deusto (PSYC)

ARIAS, COVADONGA R., Associate Professor, 2002, PhD BS Valencia Spain (FISH)

ARMBRUSTER, JONATHAN W., Alumni Professor, 1998, PhD BS Illinois (BIOL)

ARMENAKIS, ACHILLES A., Pursell Eminent Scholar and Professor, 1973, DBA Mississippi State, MBA BS Louisiana Tech (MNGT)

ARMSTRONG, JAMES B., Professor, 1990, PhD Virginia Tech, MS Abilene Christian, BS Freed-Hardeman (FOWS)

ARMSTRONG, EMILY M., Assistant Clinical Professor, 2009, PharmD Tennessee (PYPP)

ARNOLD, CHRISTOPHER, Associate Professor, 2003, MCP Auburn, BInd Auburn (INDD)

ARNOLD, ROBERT D., Associate Professor, 2012, PhD Buffalo-SUNY, BS Plattsburgh State-SUNY (PYPS)

ASHURST, WILLIAM ROBERT, Associate Professor, 2004, PhD California Berkeley, BS Auburn (CHEN)

AUAD, MARIA L., Associate Professor, 2006, PhD MS National Mar de Plata (PFEN)

AYOUN, BAKER M., Assistant Professor, 2007, PhD Oklahoma State, MBA Yarmouk Jordan, BBA Mu'tah Jordan (NDHM)

B to top

BACKSCHEIDER, PAULA R., Philpott-Stevens Eminent Scholar, 1992, PhD BA Purdue, MS Southern Connecticut State (ENGL)

BAGINSKI, MICHAEL E., Associate Professor, 1985, PhD MS BS Penn State (ELEC)

BAGINSKI, THOMAS A., Professor, 1984, PhD MSEE BSEE Penn State (ELEC)

BAILEY JR, L. CONNER, Professor, 1985, PhD Cornell, MA Ohio, BS Southern Oregon (AGEC)

BAIRD, SARA LYNN, Professor, 2009, PhD Florida State, MM Cincinnati, BM Florida State (MUSI)

BAKER, LAKAMI, Assistant Professor, 2008, PhD Texas-San Antonio, MS Texas, BS Prairie View A&M (MNGT)

BALDWIN, STEWART L., Professor, 1997, PhD BA Colorado (MATH)

BANERJEE, TANNISTA, Assistant Professor, 2011, PhD MA Purdue, BA Jadavpur (ECON)

BANNON, SUSAN, Associate Professor and Director, Learning Resources Center, 1985, EdD Louisiana State, MEd BS Auburn (EFLT)

BARBAREE, JAMES M., Scharnagel Professor, 1991, PhD Georgia, MS BS Southern Mississippi (BIOL)

BARKER, LEWIS M., Professor, 2000, PhD MA Florida State, BA Occidental (PSYC)

BARLOW, BECKY, Assistant Professor, 2007, PhD MS BS Mississippi State (FOWS)

BARNES, ROBERT W., Mallett Associate Professor, 1999, PhD MSE Texas, BCE Georgia Tech (CIVL)

BARNETT, ROD, Professor, 2006, MS PhD Auckland, BS Waikato (ARCH)

BARNETT, MARK O., Malcolm Pirnie Professor, 1999, PhD North Carolina, MS BS Tennessee (CIVL)

BARRY, NANCY H., Professor, 2007, PhD MME Florida State, BM Middle Tennessee State (CTCH)

BARRY, MARY S., Associate Professor, 1993, PhD Purdue, MA Northeast Missouri State, BSEd Southeast Missouri State (CTCH)

BARTH, JAMES R., Lowder Eminent Scholar, 1989, PhD Ohio State, MA New Mexico, BS Cal State-Sacramento (FINC)

BARTLETT, RANDALL N., Professor, 1990, MPA Columbus State, BInd Auburn (INDD)

BARTOL, FRANK F., Associate Dean and Professor, 1983, PhD MS Florida, BS Virginia Tech (VMAP)

BASKIYAR, SANJEEV, Associate Professor, 1999, PhD MSEE Minnesota, BE Indian Inst. of Science (COMP)

BEALE, DAVID G., Professor, 1989, BS Michigan Tech, PhD MSE Michigan (MECH)

BEARD, THOMAS R., Professor, 1988, PhD Vanderbilt, BA Tulane (ECON)

BECKER, THEODORE L., Holladay Professor, 1988, PhD Northwestern, MA Maryland, LLB Rutgers (POLI)

BECKWITH, GUY V., Associate Professor, 1980, PhD California-Santa Barbara, BA California-Santa Cruz (HIST)

BEHREND, ELLEN N., Joezy Griffin Endowed Professor, 1996, PhD Auburn, MS Colorado State, VMD Pennsylvania (VBMS)

BEIL JR, RICHARD O., Associate Professor, 1988, PhD Texas A&M, MS North Texas State, BBA Texas Tech (ECON)

BELL, LEONARD, Professor, 1994, PhD MS Minnesota, BA Virginia Tech (POUL)

BELLONE, JESSICA M., Assistant Clinical Professor, 2010, PharmD Drake (PYPP)

BERGEN, WERNER G., Professor, 1995, MS BS PhD Ohio State (ANSC)

BERRY, WALLACE D., Associate Professor, 1995, PhD MS BS North Carolina State (POUL)

BERTOLET, ANNA RIEHL, Associate Professor, 2007, PhD MA BA Illinois (ENGL)

BERTOLET, CRAIG E., Associate Professor, 1997, PhD MA Pennsylvania State, BA Millersville (ENGL)

BEST, TROY L., Professor, 1996, PhD MS Oklahoma, BS E. New Mexico (BIOL)

BETANZOS, LOURDES, Associate Professor and Chair, 2001, PhD MA Tennessee, BA Rutgers (FLNG)

BEVLY, DAVID M., Philpott-Westpoint Stevens Professor, 2001, PhD MS MIT Stanford, BS Texas A&M (MECH)

BEZDEK, ANDRAS, Professor, 1997, PhD Eotvos, PhD Ohio State (MATH)

BHAVNANI, SUSHIL H., Burt Professor, 1987, PhD Iowa State, MS Indian Inst., BS Bangalore (MECH)

BIAN, MORRIS L., Associate Professor, 1998, PhD Washington, MA NE Normal, BA Mudanjiang (HIST)

BILGILI, SACIT F., Professor and Extension Specialist, 1985, PhD Auburn, MS Oregon State, V.M.D. Ankara (POUL)

BILLOR, NEDRET, Associate Professor, 1992, PhD Sheffield, MS BS Turkey (MATH)

BIRD, R. CURTIS, Professor, 1985, PhD Toronto (VMED)

BLACKWELL, DIANA R., Assistant Director (HDFS)

BLAGBURN, BYRON L., Distinguished Professor, 1982, PhD Illinois, MS BS Andrews (VMED)

BLAKE, KIMBERLY BOSWORTH, Assistant Professor, 2011, PhD MBA West Virginia, PharmD BSpHarm Auburn (PYPC)

BLAKE, JOHN P., Professor and Extension Specialist, 1989, PhD Virginia Tech, MS Maine, BS Pennsylvania State (POUL)

BLUMENTHAL, RIK, Associate Professor, 1992, PhD Penn State, BS UCLA (CHEM)

BLUMSACK, JUDITH T., Assistant Professor, 2004, PhD Florida State. (CMD5)

BOBROWSKI, PAULA E., Associate Dean and Professor, 2006, PhD Syracuse, MBA BS Oregon (POLI)

BOHANAN, DONNA J., Joseph A. Kicklighter Professor, 1982, PhD MA Emory, BA Hendrix (HIST)

BOLTON, JONATHAN W., Professor, 1996, PhD Maryland, MA CUNY-Brooklyn, BA Miami (ENGL)

BOOSINGER, TIMOTHY R., Dean and Professor, 1983, DVM PhD Purdue (VMED)

BOOTHE, DAWN, Professor, 2003, D.V.M MS PhD Texas A&M (VMAP)

BOUDREAUX, MARY K., Professor, 1986, PhD Cornell, DVM LSU (VMED)

BOURDEAU, BRIAN L., Associate Professor, 2005, PhD MS BSBA Florida State (MKTG)

BOWEN, KIRA L., Professor, 1988, PhD Illinois, MS Minnesota, BS Penn State (ENPL)

BOWLING, CYNTHIA J., Associate Professor, 1998, PhD MA North Carolina, BA Tennessee (POLI)

BOYD, ROBERT S., Professor, 1988, PhD California-Davis, MS BS Cal State Poly Technic (BIOL)

BOYD, CLAUDE E., Butler Cunningham Eminent Scholar and Professor, 1971, PhD Auburn, MS BS Mississippi State (FISH)

BOZACK, MICHAEL J., Professor, 1988, PhD Oregon, MA Western Baptist, MS Michigan State (PHYS)

BRABHAM, EDNA G., Professor and Assistant Head, 1997, PhD MS BA Florida State (CTCH)

BRADEN, TIMOTHY D., Associate Professor, 1994, PhD Colorado State, BS Oklahoma State (VMAP)

BRADY, YOLANDA J., Associate Professor, 1984, PhD Auburn, MS Southern Mississippi BS Mississippi (FISH)

BRANDEBOURG, TERRY, Assistant Professor, 2008, BS Purdue, PhD Oregon State (ANSC)

BRANDON, DUANE M., Charles M. Taylor Associate Professor, 2003, PhD Virginia Tech, MAc Virginia Tech, BS Christopher Newport (ACCT)

BRANSBY, DAVID I., Professor, 1987, PhD Natal,MS South Africa,MS Missouri (AGRN)

BRANTLEY, EVE F., Assistant Professor and Extension Specialist, 2009, PhD Auburn,MS Clemson,BS Berry College (AGRN)

BRATCHER, CHRISTY, Associate Professor, 2008, BS MS Florida,PhD Missouri (ANSC)

BRAUND, KATHRYN, Holifield Professor, 2001, PhD Florida State,MA BS Auburn (HIST)

BRAWNER JR, WILLIAM R., Ware Distinguished Professor, 1975, PhD DVM Auburn,MS Florida (VBMS)

BRAXTON-LLOYD, KIMBERLY, Associate Professor, 1998, PharmD BPharm Auburn (PYPP)

BRINSON, SUSAN L., Professor, 1990, PhD MA Missouri,BA Cameron (CMJN)

BRITNELL, RICHARD E., Professor, 1991, MID BSED BFA Auburn (INDD)

BROCK, SHERI J., Associate Professor, 2002, PhD Alabama,MS BS Troy State (KINE)

BROCK, KENNY V., Professor, 1997, PhD Tennessee,MS DVM Auburn (VMED)

BROOKS, JENNIFER E., Associate Professor, 2006, PhD Tennessee,BA Massachusetts-Boston (HIST)

BROWN, MARY HELEN, Associate Professor, 1983, PhD Texas,MA Kentucky,BA Centenary (CMJN)

BROWN, M. MITCHELL, Associate Professor, 2006, PhD MA Maryland,MA George Washington,BA Meredith (POLI)

BROWN, STEVEN P., Lanier Associate Professor, 1998, PhD MA Virginia,BA Brigham Young (POLI)

BRUNNER, BRIGITTA R., Professor, 2002, PhD Florida, MA Auburn BA Juniata (CMJN)

BUB, KRISTEN, Assistant Professor, 2008, EdD MEd Harvard,BA Mount Holyoke (HDFS)

BUCHANAN, ALICE M., Associate Professor, 1997, PhD Texas A&M,MEd Mississippi,BSEd Texas (KINE)

BUCKHALT, JOSEPH A., Wayne T. Smith Distinguished Professor, 1979, PhD Vanderbilt,MS BA Auburn (SERC)

BULLARD, STEPHEN A., Assistant Professor, 2008, PhD MS Southern Mississippi,BS South Carolina (FISH)

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Alabama Agricultural Experiment Station

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HORTICULTURE

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HUMAN DEVELOPMENTAND FAMILY STUDIES

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EXTENSION COMMUNICATIONS

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ECONOMIC COMMUNITY AND DEVELOPMENT INSTITUTE

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SMITHERMAN, JIMMY D., County Extension Coordinator, 1978, BS MS Auburn

ROBINSON, ROOSEVELT L., Urban Regional Extension Agent, 2005, BS Alabama St,MS Troy St*

RUDOLPH, DANIELLE, Urban Regional Extension Agent, 2008, BS Alabama A&M,MS Murray State

GORDAN, BRETIA ARRINGTON, Regional Extension Agent, 2012, BS Tuskegee, MPA Troy St

MORGAN COUNTY – HARTSELLE

BRITNELL, RONALD W., County Extension Coordinator, 1976, BS Auburn,MS Alabama AM

GAMBLE, KENNETH W., Regional Extension Agent, 1990, BS MS Alabama A&M

REEVES, MICHAEL D., Regional Extension Agent, 2001, BS Auburn,MS Alabama A&M

HEARD, A. RENEE, Urban Regional Extension Agent, 2008, BS MS Alabama AM

O'NEAL, TAYNETTA B. , Urban Regional Extension Agent , 2013, BS MS Alabama AM

MORGAN COUNTY – HARTSELLE

BRADLEY, SPENSER E., Regional Extension Agent , 2012, BS Tennessee

PERRY COUNTY – MARION

EASLEY, KATRINA, County Extension Coordinator, 2001, BS Concordia,MS Auburn

PICKENS COUNTY – CARROLLTON

GLENN, TERA K., Regional Extension Agent, 2007, BS Alabama

PRESLEY-FULLER, PATTI, County Extension Coordinator, 1988, BS MS Mississippi St

PIKE COUNTY – TROY

KELLY, NEIL, Regional Extension Agent, 2008, BS Auburn

LEE, RACHEL A., Regional Extension Agent, 2011, BS Auburn

LYONS, GRANT P., County Extension Coordinator In Trng, 2011, BS Auburn

PIKE COUNTY – TROY

GRAVES, JORDAN D., Regional Extension Agent , 2013, BS Tennessee

RANDOLPH COUNTY – WEDOWEE

MOORE, TIFFANY N., County Extension Coordinator, 2003, BS Auburn, MEd West Alabama

RUSSELL COUNTY – PHENIX CITY

THEODORE GILBERT, County Extension Coordinator, 2005. BS, EdS, Tuskegee; MEd, Alabama AM; MEd, Georgia St

JANET A. JOHNSON, Regional Extension Agent, 2004. BS, MS, Auburn

PERKINS, KELVIN L., Regional Extension Agent, 2000, BS MS Alabama A&M

SHELBY COUNTY – COLUMBIANA

COLQUITT, RICKY, County Extension Coordinator, 2002, BS Auburn, MS Troy St

TATUM, JACK B., Regional Extension Agent, 1979, BS Auburn, MS Montevallo

TREADAWAY, ANGELA S., Regional Extension Agent, 1985, BS MAT Montevallo

WYNN, NELSON D., Regional Extension Agent, 1993, BS MS Alabama AM

ST. CLAIR COUNTY – PELL CITY

CLARK, LEE ANN, County Extension Coordinator, 1999, BS MS Montevallo

DOROUGH, HENRY, Regional Extension Agent, 1989, BS MS Auburn

FLOWERS, SYNITHIA WILLIAMS, Regional Extension Agent, 2002, BS MS Auburn

SUMTER COUNTY – LIVINGSTON

LAMPLEY, WILLIE H., County Extension Coordinator, 1986, BS Tuskegee, MEd Alabama A&M

PERRY, JONATHAN DAVID, Regional Extension Agent, 2007, BS Mississippi St., MS Auburn

SUMTER COUNTY – LIVINGSTON

MARKS, GLORIA J., Regional Extension Agent , 2012, BS Faulkner

TALLADEGA COUNTY – TALLADEGA

HAYNES, SHARON A., Regional Extension Agent, 2007, BS Alcorn St, MS Mississippi St

JURRIAANS, WANDA P., County Extension Coordinator, 1965, BS Jacksonville St, MA Auburn

TALLAPOOSA COUNTY – DADEVILLE

HARRIS, ANTHONY S., County Extension Coordinator, 2002, BS MS Auburn

TUSCALOOSA COUNTY – TUSCALOOSA

CHAPMAN, LAUREN, Regional Extension Agent, 2011, BS Auburn-Montgomery

HARGLE, PHILLIP, County Extension Agent, 2010, BS Mississippi St.

SHIRLEY, DENISE R., County Extension Coordinator, 1988, BS Auburn, MS Livingston

WALKER COUNTY – JASPER

CAIN, DANNY, County Extension Coordinator, 1992, BS MS Auburn

PERSONS, REBECCA, County Extension Agent, 2002, BA South Carolina

BARIL, ANDREW J. , Regional Extension Agent , 2007

WASHINGTON COUNTY – CHATOM

ODOM, MARGARET B., Regional Extension Agent, 2002, BS Auburn, MS Troy St, EdS Auburn

SMITH, TYRONE, Urban Regional Extension Agent, 1994, BS MS Alabama AM

WILCOX COUNTY – CAMDEN

STENZ, PAMELA C., County Extension Coordinator, 2006, BA Alabama,MS West Alabama

PADGETT, WENDY P., Regional Extension Agent, 2002, BS West Alabama

WINSTON COUNTY – DOUBLE SPRINGS

HENSHAW, MICHAEL D., County Extension Coordinator, 1983, BS MS Auburn

HILL, A. SUSAN, Regional Extension Agent, 2004, BS North Alabama

University Emeriti

A

ABNEY, LOUIS O., Professor Emeritus, June 1988, BAA MAA Auburn (Art)

ADAMS, FRED, Professor Emeritus, January 1985, BS MS LSU,PhD California. (Agronomy Soils)

ADAMS, FREDERICK P., Assoc. Professor Emeritus, January 1987, BSEE Auburn,BSIM MIT,MBA Alabama,PhD Florida St. (Management)

ADAMS JR, MURRAY C., Assoc. Professor Emeritus, January 2003, PhD Kentucky MA BA Mississippi. (Sociology)

ADRIAN JR, JOHN L., Professor Emeritus, June 2011, PhD Tennessee,MS BAA Auburn (Agricultural Economics and Rural Sociology)

ALEXANDER, DAVID E., Associate Professor Emeritus, May 2005, MM BM Texas (Music)

ALEXANDER, MILTON J., Professor Emeritus, June 1993, BS Illinois,MBA St. Louis,DBA Georgia St. (Business)

ALFORD, WILLIAM L., Professor Emeritus, September 1991, BA Vanderbilt,MS PhD Cal. Tech (Physics)

ALLEN, ELIZABETH G., Assoc. Professor Emerita, June 1989, BA Alabama,MEd PhD Sou. Mississippi (Curriculum & Teaching)

ALLEN, WARD S., Hargis Professor Emeritus, June 1987, BA MA PhD Vanderbilt (English)

ALLEN Jr, WILLIAM H., Professor Emeritus, December 1981, AB Centre,JD MA Alabama,BD Union Theol. Sem. (Marketing & Transportation)

ALVAREZ, NICOLAS E., Professor Emeritus, August 2004, BA Puerto Rico,MA PhD California-Berkeley (Foreign Languages & Literatures)

ALVERSON JR, WILLIAM J., Assistant Dean Emeritus, August 2006, MEd BS Auburn (College of Agriculture)

AMACHER, RICHARD E., Hargis Professor Emeritus, March 1984, AB Ohio,PhD Pittsburgh (English)

AMLING, HARRY J., Professor Emeritus, March 1987, BS Rutgers,MS Delaware,PhD Michigan St. (Horticulture)

ANDERSON, GLENN A., Librarian III & Assistant Dean & Emeritus, August 2010, MLS Florida State,MA BA SUNY-Albany (University Libraries)

ASH, BARBARA H., Associate Professor Emerita, November 2011, PhD Florida State,MA SUNY,BA Marshall (Curriculum and Teaching)

ASKEW, RAYMOND F., Professor Emeritus, September 1995, BS Birmingham Southern,PhD Virginia (Physics)

ATKINS, LEAH RAWLS, Director Emerita, September 1995, BS MA PhD Auburn (Center for Arts & Humanities)

ATTLEBERGER, MARIE H., Professor Emerita, October 1986, DVM MS Auburn,PhD Alabama (Microbiology)

AULL, JOHN L., Professor Emeritus, September 2005, PhD North Carolina St,AB North Carolina (Chemistry & Biochemistry)

AULT, RICHARD W., Associate Professor Emeritus, August 2011, PhD Virginia,AB W. Virginia (Economics)

AVERY, ARTHUR W., Professor Emeritus, September 2011, PhD MS BA Penn State (Human Development and Family Studies)

[B to top](#)

BACKMAN, PAUL A., Professor Emeritus, February 1998, PhD California (Plant Pathology)

BAIRD, SAMERA, Professor Emerita, September 2005, PhD Texas, MA BS Tennessee (Rehabilitation & Special Education)

BAIRD, WILLIAM E., Professor Emeritus, June 2002, Ph.D Texas, MS BS Tennessee (Curriculum & Teaching)

BAKER, CLINTON A., Professor Emeritus, June 1993, BS Louisville, MBA DBA Indiana (Marketing & Transportation)

BAKER, RICHARD A., Professor Emeritus, September 1995, BS MEd Auburn, EdD Oklahoma St. (Vocational & Adult Educ.)

BALCH, GEORGE T., Extension Specialist Emeritus, September 1995, BS MS Auburn, JD Jones (Pesticide Education)

BALL, DONALD M., Professor Emeritus, December 2010, PhD MS Auburn, BS Western Kentucky (Agronomy and Soils)

BARKER, KENNETH N., Professor Emeritus, October 2009, PhD Mississippi, MS BSP Florida (Pharmacy Care Systems)

BARKER, LARRY L., Professor Emeritus, September 1995, BA MA PhD Ohio (Communications)

BARNES, PAT H., Vice President Emerita, September 1995, BS Texas Woman's U, MEd EdD Auburn (Student Affairs)

BARNETT, ANDY, Professor Emeritus, September 2000, BA MA PhD Virginia (Economics)

BARRY, MARY E., Assoc. Professor Emerita, June 1999, BS MS EdD Temple (Consumer Affairs Department)

BARTELS, JAN E., Professor & Head Emeritus, January 2001, BS Oregon St, MS Guelph, DVM Washington St. (Radiology)

BAYNE, DAVID R., Professor Emeritus, September 2006, BA Tulane, MS PhD Auburn (Fisheries & Allied Aquacultures)

BEALS, HAROLD O., Assoc. Professor Emeritus, August 1993, BS MS PhD Purdue (Forestry)

BEARD, ATHA A., Assoc. Professor Emerita, September 1995, BS MBA Auburn (Accounting)

BECK, DIANE E., Professor Emerita, April 2004, PharmD BS Pharm Florida (Clinical Pharmacy Practice)

BECKETT, SIDNEY D., Assoc. Dean Emeritus, April 1994, BS Mississippi St, DVM MS Auburn, PhD Missouri (Research Graduate Studies, Veterinary Medicine)

BELL, SIDNEY C., Professor Emeritus, October 1988, BS MS Auburn, PhD Michigan St, JD Jones (Agric. Economics)

BENEFIELD, LARRY O., Dean and Professor Emeritus, July 2012, PhD Virginia Tech, MS BCE Auburn (Samuel Ginn College of Engineering)

BENGTON, GEORGE W., Assoc. Dean & Professor Emeritus, July 2001, BS LSU, M.F. Duke, PhD Yale (Forestry & Wildlife Sciences)

BENNETT JR, DANIEL D., Professor Emeritus, January 2011, MArch Rice, BArch Auburn (Architecture)

BERGER, BRUCE A., Professor & Department Head Emeritus, September 2009, PhD MS BSP Pharm Ohio State (Pharmacy Care Systems)

BERNSTEIN, ROBERT A., Professor Emeritus, July 2009, BS MS PhD Cornell (Political Science)

BIGGS, LINDY B., Associate Professor Emerita, May 2012, PhD MIT, MA BS Missouri (History)

BLACK, J TEMPLE, Professor Emeritus, September 1998, BS Lehigh, MS W. Virginia, PhD Illinois (Industrial & Systems Engineering)

BLACKBURN, JACK E., Assoc. Provost Emeritus & Professor Emeritus, September 1994, BS Florida St, MA Peabody, EdD New York (Education)

BLACKWELL, GAINES T., Professor Emeritus, September 2001, MFA Georgia, AB Alabama (School of Architecture)

BLAKNEY, WILLIAM G., Assoc. Professor Emeritus, June 1990, BS Nova Scotia Tech, MSc Ohio St. (Industrial Engineering)

BLASHFIELD, ROGER K., Professor Emeritus, October 2010, PhD AM Indiana, BS Ohio State (Psychology)

BLAYLOCK, ROBERT E., Professor Emeritus, December 2003, MS Mississippi St. (Animal Sciences)

BLEVINS, WILLARD T., Assoc. Professor Emeritus, September 1995, BS Appalachian St,MS PhD North Carolina St. (Microbiology)

BOLAND III, JOSEPH S., Professor Emeritus, June 2007, BEE MS Auburn PhD Georgia Tech (Electrical Engineering)

BOND, EVELYN B., Assoc. Professor Emerita, June 1992, BS Berry,MEd Auburn (Vocational & Adult Education)

BOSTON, ROBERT O., Assoc. Professor Emeritus, September 1978, BS MS Alabama (Economics)

BOULTON, WILLIAM R., Professor Emeritus, 2007, DBA Harvard,MBA. BBA Washington (College of Business)

BOWMAN, BRIAN L., Professor Emeritus, August 2010, PhD MS BS Wayne State (Civil Engineering)

BOYLES, WILEY R., Professor Emeritus, September 1995, BS Chattanooga,PhD Tennessee (Management)

BRADBARD, MARILYN R., Professor Emeritus, July 2006, BA New Hampshire,MS PhD Georgia. (Human Development & Family Studies)

BRADBERRY, GEORGE L., Executive Director Emeritus, September 1985, BS Georgia (Alumni & Development)

BRADLEY, JAMES T., Professor Emeritus, June 2010, PhD Washington,BS Wisconsin (Biological Sciences)

BRAMLETT, GENE A., Director Emeritus, September 1995, BS Murray St,MS PhD Kentucky (Center on Aging)

BRANCH, CHARLES E., Professor Emeritus, December 2003, PhD BME Auburn (Anatomy, Physiology & Pharmacology)

BRANDT, PAUL C., Professor Emeritus, January 1993, BS MS Illinois (Building Science)

BRAUND, KYLE G., Professor Emeritus, January 1999, BVSc MVSc PhD Sydney (Veterinary Medicine)

BREWER, JESSE W., Professor Emeritus, July 2006, PhD Purdue,MA BS Central Michigan (Entomology & Plant Pathology)

BREWER, ROBERT N., Department Head & Professor Emeritus, January 2002, PhD Georgia,MS BS Auburn (Poultry Science)

BRINKER, RICHARD W., Dean Emeritus, February 2011, PhD BS LSU,MBA Southern Mississippi (Forestry & Wildlife Sciences)

BROUGHTON JR, ROYALL M., Professor Emeritus, June 2008, PhD MS BS North Carolina State (Polymer & Fiber Engineering)

BROWER, H. TERRI, Professor Emerita, August 2000, BSN Teacher MA Columbia,EdD Nova (Nursing)

BROWN, ALFRED E., Professor Emeritus, May 2008, PhD UCLA,BS Cal.State-Long Beach (Biological Sciences)

BROWN, ELTON R., Professor Emeritus, July 2007, BS Mississippi State,MS Mississippi State,PhD Texas A&M (Civil Engineering)

BROWN, JAMES E., Professor Emeritus, April 2010, BS Ft. Valley State,MS Tuskegee,PhD Illinois (Horticulture)

BROWN, PHILLIP W., Extension Affirmative Action Officer Emeritus, December 2003, BS MEd EdS Tuskegee (Alabama Cooperative Extension System)

BROWN, JACK B., Professor Emeritus, May 2006, PhD MA BA University of Texas (Mathematics and Statistics)

BROWN JR., CLARENCE D., Professor Emeritus, August 2004, PhD Georgia,MEd Auburn,BS Troy St. (Rehabilitation & Special Education)

BROWNING, PHILIP L., Professor Emeritus, September 2008, PhD Wisconsin,MA Texas Tech,BA Howard Payne (Rehabilitation & Special Education)

BRUNNER, CINDY J., Associate Professor Emeritus, July 2007, DVM PhD BS Minnesota ()

BUCK, DONALD C., Associate Professor Emeritus, June 2009, PhD MA BA Texas (Foreign Languages & Literatures)

BUFORD Jr, JAMES A., Extension Management Scientist Emeritus, September 1995, BS MS Auburn,PhD Georgia (Coordinator Emeritus, Management Development)

BULFIN, ROBERT L., Professor Emeritus, May 2010, PhD MS BS Georgia Tech (Industrial & Systems Engineering)

BURKHALTER, BETTYE B., Assoc. Provost & Vice President for Student Affairs & Professor Emerita, April 2000, BS MA EdD PhD Alabama ()

BURKHALTER, JOHN E., Professor Emeritus, December 2004, PhD Texas,MSAE BAE Auburn (Aerospace Engineering)

BURNEY, SAMUEL M., Director Emeritus, July 2009 (Outreach Program Office)

BURNS, MOORE J., Professor Emeritus, March 1982, BS MS Auburn,PhD Purdue (Physiology & Pharmacology)

BUSCH, RUTH C., Assoc. Professor Emerita, September 1991, AB Cornell,MA Utah St,PhD Arizona (Sociology)

BUSSELL, WILLIAM H., Professor Emeritus, June 1989, BME MSE Florida,PhD Michigan St. (Mechanical Engineering)

BUXTON, DONALD, Professor Emeritus, April 2002, DVM Auburn,PhD Florida (Anatomy, Physiology, Pharmacology)

C to top

CADENHEAD, A. KENNETH, Professor Emeritus, June 1992, BS MEd Georgia,EdD Auburn (Curriculum & Teaching)

CALLAN Jr, ALLIE W., Assoc. Professor Emeritus, June 1986, BS Maryland,MS George Washington (Aerospace Engineering)

CAMPAGNA, KEITH D., Assoc. Professor Emeritus, April 2003, PharmD BS Pharmacy Duquesne (Pharmacy Practice)

CAMPBELL, L. CAINE, Professor Emeritus, July 1992, BS Mississippi St,MA PhD Mississippi (History & Journalism, & Assoc. Dean Emeritus, College of Liberal Arts)

CANTRELL, CLYDE HULL, Director Emeritus, July 1977, AB MA ABLs North Carolina,PhD Illinois (LIBRARY)

CARINO, HONORIO F., Professor Emeritus, January 2012, PhD Minnesota,MS BS Philippines (Forestry and Wildlife Sciences)

CARLISLE III, W. HOMER, Professor Emeritus, 1988, PhD MS BA Emory (COMPUTER SCIENCE AND SOFTWARE ENGINEERING)

CARR, HOUSTON H., Professor Emeritus, May 2012, PhD Texas-Arlington,MBA M.MS Texas Christian,BSEE Virginia Military Inst. (Aviation and Supply Chain Department)

CARRINGTON, THOMAS J., Professor Emeritus, April 1994, BS MS Kentucky,PhD Virginia Tech (Geology)

CAUDILL, STEVEN B., Professor Emeritus, June 2009, PhD MA Florida,BA Ohio Wesleyan (Economics)

CAUSEY, M. KEITH, Professor Emeritus, August 2000, BS MS PhD LSU (School of Forestry & Wildlife Sciences)

CAVENDER, A. RAY, Assoc. Director Emeritus, October 1993, BS MS Tennessee,PhD Wisconsin (ACES)

CAVENDER, DOROTHY H., Professor Emerita, June 2008, EdD Auburn,MS BS Kentucky (Consumer Affairs)

CHAMBLISS, OYETTE L., Professor Emeritus, September 1995, BS MS Auburn,PhD Purdue (Horticulture)

CHASTAIN, MARIAN, Assoc. Professor Emerita, June 1986, BS Cedar Crest,MS PhD Florida St. (Nutrition & Foods)

CHERRY, JOE H., Professor Emeritus, June 2005, BS Tennessee,MS PhD Illinois (Biological Sciences)

CHILDRESS, GEORGE B., Librarian Emeritus, January 2009, MLS MA Alabama,BA Virginia Commonwealth (Auburn University Libraries)

CLARK, CARL H., Professor & Head Emeritus, January 1992, BS DVM Washington St,MS PhD Ohio St. (Physiology & Pharmacology)

CLARK, WAYNE E., Professor Emeritus, December 2010, BS MS Brigham Young,PhD Texas A&M (Entomology and Plant Pathology)

CLARK, CALEB M., Professor Emeritus, 2012, BA Beloit,PhD Illinois (Political Science)

CLARK, RONALD L. , Professor Emeritus (Accountancy)

CLARK-LEWIS, SANDRA R., Professor Emerita, October 2010, AuD Florida,MComm BS Auburn (Communication Disorders)

CLAYTON, HOWARD R., Professor Emeritus, 1999, PhD Georgia,BS Dipl West Indies,MAM Georgia (AVIATION AND SUPPLY CHAIN MANAGEMENT)

CLEM, MARY CATHERINE, Assoc. Professor Emerita, June 1998, BS MS Auburn (Consumer Affairs)

CLONTS Jr, HOWARD A., Professor Emeritus, September 2000, BS MS Auburn, PhD Virginia Tech (Agricultural Economics & Director of the Environmental Institute)

COBIA, DEBRA C., Professor Emerita, May 2009, EdD Alabama, EdS MEd West Georgia (Special Education, Rehabilitation, Counseling/School Psychology)

COCHRAN JR, JOHN E., Professor Emeritus, 1969, JD Jones Law, PhD Texas, MS BAE Auburn (AEROSPACE ENGINEERING)

CODY, REYNOLDS M., Assoc. Professor Emeritus, October 1991, BA Tennessee, MS PhD Mississippi St. (Botany & Microbiology)

COKER, SAMUEL T., Professor and Dean Emeritus, July 1992, BS Auburn, MS PhD Purdue (Pharmaceutical Sciences)

CONNELL, LENDA JO, Under Armour Professor Emerita, June 2012, EdD Auburn, MS LSU, BS Louisiana Tech (Consumer Affairs)

CONNER, DIXIE F., Business Manager Emerita, June 1994, BA Auburn (Athletics)

CONNER, PAUL C., Director Emeritus, November 1992, BS MEd Auburn (Athletic Facilities & Turf Management)

COOK, ALAN R., Associate Professor Emeritus, May 2011, MArch BArch Nebraska (Architecture, Planning, and Landscape Architecture)

COOK, JAMES P., Assistant Dean Emeritus, July 2012, MAc BS Auburn (College of Business)

COOK JR, ROBERT B., Professor Emeritus, July 2007, PhD MS Georgia, EM Colorado-Mines (Geology & Geography)

COOPER, JOHN R., Assoc. Professor Emeritus, June 1994, MS Ohio St, BEP PhD Auburn (Physics)

COOPER, THOMAS E., Professor Emeritus, June 2002, PhD Auburn (Building Science)

CORLEY, TOM E., Assoc. Dean Emeritus & Assoc. Director Emeritus, October 1984, BS MS Auburn (Agricultural Experiment Station)

COX, J. GRADY, Professor Emeritus, June 1992, BS MS Auburn, PhD Purdue (Industrial Engineering)

CRAIG-SCHMIDT, MARGARET C., Professor Emerita, June 2012, BA Duke, PhD Wisconsin (Nutrition, Dietetics and Hospitality Management)

CRISS, ROBERT R., Assoc. Professor Emeritus, June 1993, BBA MBA LLB JD Mississippi, LLM Alabama (Accountancy)

CROCKER, RUTH C., Professor Emerita, 1988, PhD MA Purdue, BA Oxford (HISTORY)

CROCKER, MALCOLM J., Professor Emeritus, August 2011, MS BS Southampton, PhD Liverpool (Mechanical Engineering)

CRONENBERG JR., ALLEN T., Assoc. Professor Emeritus, February 2004, PhD Stanford, MA BA North Carolina (History)

CUNNINGHAM, DONALD H., Professor Emeritus, May 2005, PhD MA BA Missouri (English)

CUPP, EDDIE W., Professor Emeritus, May 2006, PhD Illinois, BA Murray St. (Entomology & Plant Pathology)

CUPP, MARY S., Professor Emerita, May 2006, PhD Cornell, BS New Orleans (Entomology & Plant Pathology)

CURTIS, CHRISTINE W., Professor Emeritus, February 2007, PhD MS Florida St, BS Mercer (Chemical Engineering)

CURTIS, LARRY M., Extension Specialist & Professor Emeritus, December 2003, MS BS Auburn (Biosystems Engineering)

CUTCHINS, MALCOLM F., Professor Emeritus, July 1999, BS MS PhD Virginia Tech (Aerospace Engineering)

D to top

DANE, JACOB H., Professor Emeritus, August 2008, PhD Colorado State, MS New Mexico State, BS Netherlands (Agronomy & Soils)

DARLING, CHARLES M., Professor and Associate Professor Emeritus, September 1995, BS PhD Mississippi (Pharmaceutical Sciences)

DARON, CAROL F., Asst. Provost Emerita, July 1997, BA Huntingdon, MA Florida St, PhD Auburn (Undergraduate Studies)

DAVIES, WILLIAM D., Professor Emeritus, September 1996, BS Purdue,MS Ohio St,PhD North Carolina St. (Fisheries & Allied Aquacultures)

DAVIS, NICHOLAS D., Professor Emeritus, September 1995, BA BArch Rice,MF Arch Princeton (Architecture)

DAVIS, NORMAN D., Professor Emeritus, June 1990, BS Georgia,MS PhD Ohio St. (Botany & Microbiology)

DAVIS JR, KERMIT R., Professor Emeritus, May 2008, PhD Georgia,MBA Mississippi State,BA Mississippi College (Management)

DAWSEY III, CYRUS B., Professor Emeritus, June 2008, PhD Florida,MA BS Florida State (Geology & Geography)

DAY, WILLIAM B., Associate Professor Emeritus, April 1997, BEE MS PhD Rensselaer (Computer Science and Software Engineering)

DE MAINE, PAUL A.D., Professor Emeritus, January 1995, BS Witwatersrand,PhD British Columbia (Computer Science and Software Engineering)

DECKER, HAROLD R., Assoc. Professor Emeritus, January 1979, BSEd N.E. Missouri St,M. Litt,Pittsburgh (Aerospace Engineering)

DICKENS, RAY, Professor Emeritus, September 1995, BS Arkansas,MS PhD Auburn (Agronomy & Soils)

DIENER, URBAN, Professor Emeritus, October 1987, BA Miami-Ohio,MA Harvard,PhD North Carolina St. (Plant Pathology)

DINIUS, ROBERT H., Assoc. Professor Emeritus, June 1992, BS Illinois Wesleyan,MS Missouri,PhD Florida St. (Chemistry)

DINIUS, SARA, Assoc. Professor Emeritus, June 1993, BS Northwestern,MS PhD Auburn (Accountancy)

DIORIO, DOROTHY M., Professor Emerita, June 1993, AB Bucknell,MA Middlebury,PhD North Carolina (Foreign Languages)

DIXON, CARL, Assoc. Professor Emeritus, September 1991, BA Colorado,PhD Kansas St. (Zoology & Wildlife Science)

DOBIE, JAMES L., Professor Emeritus, October 1996, BS Centenary,MS PhD Tulane (Zoology & Wildlife Science)

DOERSTLING, STEFFEN, Professor Emeritus, January 1993, BA Munich,MA PhD Stuttgart (Architecture)

DONNAN, HUGH H., Professor Emeritus, April 1992, BA MEd Furman,PhD North Carolina (Counseling & Counseling Psych.)

DOZIER, LESEL A., Extension 4-H Specialist Emeritus, September 1995, BS MEd PhD Auburn ()

DOZIER JR, WILLIAM A., Professor Emeritus, April 2012, PhD Virginia Tech,MS BS Auburn (Horticulture)

DRAGOIN, ANTHONY, Assoc. Professor Emeritus, June 1989, BS MS Auburn,EdD Alabama (Health & Human Performance)

DRAKE, JAMES B., Professor & Department Head Emeritus, September 1995, BS MEd EdD Auburn (Voc. & Adult Education)

DUBOIS, MARK R., Assoc. Professor Emeritus, March 2008, BS Arizona,MS Missouri,PhD Mississippi St (Forestry & Wildlife Sciences)

DUFFIELD, FRANCES J., Assoc. Professor Emerita, June 1990, BS Montana St,MS Virginia Tech,PhD Tennessee (Consumer Affairs)

DUGAS JR, RAY B., Professor Emeritus, 1974, MFA Georgia State,BFA LSU (INDUSTRIAL AND GRAPIC DESIGN)

DUGGER Jr, FOWLER, Editor Emeritus, July 1987, BA Alabama,MA Duke ()

DUNCAN, BRYAN L., Professor Emeritus, October 2005, PhD Wayne St,BA Pittsburg St. (Fisheries & Allied Aquacultures)

DUNKELBERGER, JOHN E., Professor Emeritus, December 2003, PhD Mississippi St,MS Penn St,AB Franklin amp,Marshall (Agricultural Economics & Rural Sociology)

DUNLOP, ALEXANDER W., Associate Professor Emeritus, May 2007, PhD MA North Carolina,BA Hobart (English)

DUSI, JULIAN L., Professor Emeritus, September 1992, BS MS PhD Ohio St. (Zoology & Wildlife Science)

DYE, PATRICK F., Head Football Coach Emeritus, September 1994, BS Georgia ()

DeVALL, WILBUR B., Professor Emeritus, February 1978, BS New York St. Forestry,MS Florida (Forestry)

EASTERDAY, KENNETH E., Professor Emeritus, June 1998, MAT Indiana, EdD Case Western (Curriculum & Teaching)

EAVES, RONALD, Professor Emeritus, May 2008, PhD Georgia, MEd Florida, BS Florida (Rehabilitation & Special Education)

EDMONDS, CHARLES III, Professor Emeritus, September 1995, BA MSA Auburn, PhD Arkansas (Finance)

EKELUND Jr, ROBERT B., Lowder Eminent Scholar Emeritus, October 2003, PhD LSU, MA BSBA St. Mary's (Economics)

ELDER, THOMAS J., Professor Emeritus, June 2003, BS SMU, MF Stephen F. Austin State, PhD Texas A&M ()

ELLIOTT, THOMAS R., Extension Chief Financial Officer Emeritus, May 2005, BS Austin Peay, MEd EdD Auburn (Alabama Cooperative Extension System)

ESCARPANTER, JOSE A., Professor Emeritus, May 2001, MA PhD Havana (Foreign Languages & Literatures)

EVANS, CLYDE E., Professor Emeritus, April 1992, BS Abilene Christian, MS Auburn, PhD North Carolina St. (Agronomy & Soils)

EVEREST, JOHN W., Extension Specialist & Professor Emeritus, December 2003, PhD MS Auburn, BS Alabama (Agronomy & Soils)

EWALD, SANDRA J., Professor Emerita, September 2008, PhD BA Texas (Pathobiology)

F to top

FABEL, ROBIN F.A., Professor Emeritus, June 2001, BA MA Oxford, PhD Auburn (History)

FAUPEL, CHARLES E., Professor Emeritus, December 2010, PhD Delaware, MA Central Michigan, BA Asbury (Sociology, Anthropology and Social Work)

FAUST, ROBERT L., Professor Emeritus, 1968, BArch Oklahoma (ARCHITECTURE)

FELKEY, BILL G., Professor Emeritus, February 2009, MS Indiana, BA Maine (Pharmacy Care Systems)

FELLERS, ROBIN B., Associate Professor Emerita, August 2012, PhD Florida, MS Kansas State, Dipl H Sc New Zealand (Nutrition, Dietetics, and Hospitality)

FIELDS, KENT T., Professor Emeritus, June 2001, BBA N. Texas, PhD Texas A&M (School of Accountancy)

FITCH, JAMES L., Professor Emeritus, July 2005, PhD MS Florida St, BS Illinois St. (Communication Disorders)

FLICK, WARREN A., Assoc. Professor Emeritus, February 1998, BS PhD SUNY (School of Forestry)

FLOOD Jr, CLIFFORD A., Assoc. Professor & Chair Emeritus, September 2003, PhD Purdue, MSAE Kentucky, BAgE Florida (Biosystems Engineering)

FLUKER, BILLIE, Assoc. Professor Emeritus, June 1987, BS MS Texas A&M, PhD Tulane (Mechanical Engineering)

FLYNT, J. WAYNE, Professor Emeritus, October 2005, PhD MA Florida St, AB Howard (History)

FRENCH, FRANCES C., Assoc. Professor Emerita, September 1992, BA MS LSU, JD Jones (Sociology, Anthropology & Social Work)

FRENCH, JOHN C., Professor Emeritus, March 1991, BS MS Auburn, PhD Clemson (Entomology)

FRIEDMAN, MICHAEL, Professor Emeritus, August 2007, BS Pennsylvania, MS Polytechnic Inst. of Brooklyn, PhD Cornell (Chemistry & Biochemistry)

FROBISH, LOWELL, Director Emeritus, March 2005, BS Illinois, MS PhD Iowa St. (Alabama Agricultural Experiment Station)

FUKAI, JUNICHIRO, Professor Emeritus, June 2008, PhD Tennessee, MS Denver, BEng Waseda (Physics)

G to top

GALBRAITH, RUTH L., Dean Emerita, September 1985, BS PhD Purdue (Human Sciences & Professor Emerita, Consumer Affairs)

GARRETT, PHILLIP D., Assoc. Professor Emeritus, September 1995, BS DVM MS Missouri (Anatomy & Histology)

GARRISON, ROGER W., Professor Emeritus, December 2011, PhD Virginia, MA Missouri-Kansas, BSEE Missouri State (Economics)

GAYLOR, MICHAEL J., Assoc. Professor Emeritus, September 1998, BS MS Auburn, PhD Texas A&M (Entomology)

GEIGER, GRADY E., Librarian III Emeritus, May 1994, BS Auburn,MLS Michigan (Ralph Brown Draughon Library)

GERBER, LARRY G., Professor Emeritus, July 2008, PhD MA BA California (History)

GIBBS, ROBERT C., Asst. University Librarian & Librarian III Emeritus, October 1992, AB Duke,MSLS North Carolina ()

GILES, WILLIAM F., Professor Emeritus, June 2011, PhD Tennessee,MA Georgia,BA Duke (Management)

GIMENEZ JR, DIEGO M., Associate Professor Emeritus, January 2009, PhD MS BS Florida (Animal Sciences)

GJERSTAD, DEAN H., Professor Emeritus, December 2008, BS MS PhD Iowa St (Forestry & Wildlife Sciences)

GLAZE, LINDA, Associate Provost Emerita for Undergraduate Studies and Associate Professor Emerita, September 2010, PhD MA Wisconsin,BA Marietta (Foreign Languages & Literatures)

GLOVER, GLENN R., Professor Emeritus, April 2006, PhD Virginia Tech,MS BS Auburn (Forestry & Wildlife Sciences)

GOLDEN, MICHAEL S., Assoc. Professor Emeritus, September 2001, PhD Tennessee,MS Auburn,AB Trevecca (School of Forestry & Wildlife Sciences)

GOODLING, JOHN S., Professor Emeritus, June 1996, BSE MSE PhD Florida (Mechanical Engineering)

GOSSETT Jr, CLAUDE W., Professor Emeritus, June 1998, BS Lamar,MCM Southwest Baptist Theo. Sem,PhD Southern Mississippi (Music)

GRAF, EDWARD R., Professor Emeritus, January 1987, BEE MEE Auburn,PhD Stuttgart (Electrical Engineering)

GRAVES, RICHARD L., Professor Emeritus, September 1995, BA Baylor,MEd Florida,PhD Florida St. (Curriculum & Teaching)

GRAVOIS, JAMES M., Librarian Emeritus, August 2008, MLIS South Carolina,MA Texas,BA New Orleans (Ralph Brown Draughon Library)

GREENE, MICHAEL E., Professor Emeritus, June 2007, PhD Rice MS BEE Ohio State (Electrical & Computer Engineering)

GREENLEAF, ROBERT B., Professor Emeritus, October 2007, BM Florida State,MM D. Mus Arts Louisiana State (Music)

GREENSHIELDS, CHARLES M., Assoc. Professor Emeritus, June 1990, BA MA PhD Michigan St. (Educational Foundations, Leadership & Technology)

GRIGSBY, LEO L., Professor Emeritus, July 1999, BSEE MSEE Texas Tech,PhD Oklahoma St. (Electrical & Computer Engineering)

GROSS, CHARLES A., Professor Emeritus, June 2007, PhD MS Missouri-Rolla,BS Alabama (Electrical & Computer Engineering)

GROTH Jr, AARON H., Professor Emeritus, January 1993, BS DVM Auburn,MS Iowa St. (Pathobiology)

GROVER, JOHN H., Professor Emeritus, April 2002, PhD MS Iowa St,BS Utah (Fisheries & Allied Aquacultures)

GUDAUSKUS, ROBERT T., Professor Emeritus, October 1993, BS East Illinois,MS PhD Illinois (Plant Pathology)

GUFFEY JR, HUGH J., Associate Professor Emeritus, June 2007, PhD MBA B.BA Georgia (Marketing)

GUIN, JAMES A., Professor Emeritus, October 2005, PhD Texas,MS BS Alabama (Chemical Engineering)

GUNDLACH, JAMES H., Professor Emeritus, September 2007, PhD MA Texas,B.A Oklahoma State (Sociology)

GUTHRIE, RICHARD, Dean, December 2003, PhD Cornell,MS BS Auburn (Director, & Professor Emeritus, College of Agriculture & Alabama Agricultural Experiment Station)

GWIN, WILLIAM R., Professor Emeritus, September 1998, BArch Auburn,MArch Pennsylvania,MVA Georgia St. (Architecture; Director Emeritus, University Honors College)

H to top

HAIRSTON, JAMES E., Professor Emeritus, September 2009, BS Berry,PhD Georgia (Agriculture)

HAJEK, BENJAMIN F., Professor Emeritus, September 1995, BS Texas A&M,MS PhD Auburn (Agronomy & Soils)

HALE, DENNIS, Assoc. Professor Emeritus, June 1985, BS Middle Tennessee St, MA Peabody (Accounting & Finance)

HALE, FRANCES W., Assoc. Professor Emerita, June 1982, BS Troy St MA Peabody (Vocational & Adult Education)

HALL, DAVID M., Professor Emeritus, September 1995, BS Auburn, MS Clemson, PhD Victoria (Textile Engineering)

HALL, HINES H., Assoc. Professor Emeritus, July 2006, PhD Vanderbilt, MA Auburn, BA Duke (History)

HALPIN, GERALD, Professor Emeritus, May 2009, EdD MEd Georgia, BS Jacksonville State (Educational Foundations, Leadership & Technology)

HALPIN, GLENNELLE, Professor Emerita, May 2009, PhD MA Georgia, BS Jacksonville State (Educational Foundations, Leadership & Technology)

HAMRICK, MAYNARD E., Professor Emeritus, June 2005, BS PhD MS Auburn (Pharmaceutical Sciences)

HANKES, GERALD H., Professor Emeritus, September 2001, BS DVM Illinois, MS PhD Colorado St. (College of Veterinary Medicine)

HARGIS, JAMES H., Professor Emeritus, August 2004, PhD Utah, BS Eastern New Mexico (Chemistry)

HARRELL, DAVID E., Breeden Eminent Scholar Emeritus, October 2005, PhD MA Vanderbilt, BA Lipscomb (History)

HARRIS, JAMES R., Professor Emeritus, June 2007, PhD MBA Florida, B.A. Emory (Marketing)

HARRIS, RALPH R., Professor & Head Emeritus, September 1995, BS MS Auburn, PhD Texas A&M (Animal & Dairy Sciences)

HARTSFIELD, NANCY M., Professor Emerita, January 2002, BVD MFA Auburn (Art)

HARZEM, PETER, Professor Emeritus, May 2006, PhD Wales, BS London (Psychology)

HATCH, UPTON, Professor Emeritus, September 2006, PhD Minnesota, MS Georgia, BS Dartmouth (Agricultural Economics & Rural Sociology)

HATFIELD, DONALD G., Professor Emeritus, June 1994, BA MA Michigan St, MFA Wisconsin (Art)

HAWSEY, LAWRENCE S., Extension Leader Emeritus, September 1995, BS MEd Auburn, EdS Mississippi St. (Programs & Events)

HAYES, VIRGINIA, Assoc. Dean Emerita, July 1998, BS Samford, MA EdD Alabama (Education)

HAYHURST, DONALD E., Professor Emeritus, September 1988, AB MLitt PhD Pittsburgh (Political Science)

HAYNES, WILLIAM O., Professor Emeritus, May 2008, PhD Bowling Green, MA BA N. Michigan (Communication Disorders)

HEATH, JO W., Professor Emeritus, 2007, PhD MS Auburn, BS Southwest Louisiana (Mathematics & Statistics)

HEBERT, ROBERT F., Russell Foundation Professor Emeritus, June 2000, BS MS PhD LSU (Economics)

HEILMAN, JOHN G., Provost & Vice President for Academic Affairs Emeritus, January 2009, PhD MA N.Y.U., BA Lafayette (Political Science)

HELMKE, HENRY C., Assoc. Professor Emeritus, June 1993, BA MA Duke, PhD Ohio St. (Foreign Languages)

HENDERSON, JOHN B., Professor Emeritus, January 1995, BS MS Auburn, PhD North Carolina St. (Agronomy & Soils)

HENLEY, ATHA LOUISE, Librarian III Emerita, September 1995, BA Missouri Valley, MLS California-Berkeley ()

HENRY, JOHN F., Professor Emeritus, January 1986, BIM Auburn, MSIM Georgia Tech, PhD Alabama (Management)

HENSON, CURTIS T., Professor Emeritus, July 1993, BA MA Auburn, PhD Tulane (History)

HIERS, CHARLES J., Professor Emeritus, June 1988, BAA MAA Auburn (Art)

HIGHFILL, WILLIAM C., Librarian IV Emeritus, June 2000, AB Oklahoma Baptist, MS Kansas St, PhD Illinois ()

HILL, DAVID T., Professor Emeritus, May 2010, PhD Clemson, MS BSAE Georgia (Biosystems Engineering)

- HILL, PAUL D., Professor Emeritus, August 2000, BS MS PhD Auburn (Mathematics)
- HILL, WILLIAM E., Professor Emeritus, October 2005, PhD Strathclyde, MS BS Florida St. (Chemistry & Biochemistry)
- HILTBOLD, ARTHUR E., Professor Emeritus, July 1991, BS PhD Cornell, MS Iowa St. (Agronomy & Soils)
- HINRICHSSEN, JOHN W., Assoc. Professor Emeritus, September 1998, BA MA PhD Texas (Mathematics)
- HINTON, MARJORIE J., Assoc. Professor Emerita, June 1984, BS Alabama, MS Auburn (Family & Child Development)
- HINTON, WILBUR, Professor Emeritus, July 1984, BM MA EdD Alabama (Music)
- HIRTH, LEO J., Professor Emeritus, January 1990, BS CCNY, MS PhD Texas (Chemical Engineering)
- HITCHCOCK JR., WALTER B., Professor Emeritus, May 2008, PhD Duke, MA Oregon, BA Auburn (English)
- HOBBS, MARLEAH K., Assoc. Professor Emerita, June 1988, BFA Colorado, MFA Mississippi (Art)
- HOERR, FREDERIC J., Professor Emeritus, March 2012, PhD MS DVM Purdue (Pathobiology)
- HOLLER, NICHOLAS R., Professor Emeritus. Zoology & Wildlife Science, October 1998, MS DVM Auburn ()
- HOLLEY, BETTY B., Extension Specialist Emerita, September 1995, BS Tennessee, MS Alabama, EdD Auburn (4-H Program)
- HOLLEY Jr, WILLIAM H., Professor Emeritus, July 2001, BS MBA Mississippi St, PhD Alabama (Management)
- HOLLOWAY, BOBBY E., Asst. Dean & Librarian III Emeritus, March 1998, BA Harding, MLS Kentucky ()
- HOOD, JOSEPH T., Professor Emeritus & Department Head Emeritus, October 1986, BS Georgia, MS Purdue, PhD Cornell (Agronomy & Soils)
- HOOL, JAMES N., Professor Emeritus, July 1998, BS MS PhD Purdue (Industrial & Systems Engineering)
- HOPKINS, BILL L., Professor Emeritus, July 2001, BA Emory, PhD Indiana (Psychology)
- HORNE, ROBERT D., Professor Emeritus, September 1994, DVM MS Auburn (Small Animal Surgery & Medicine)
- HOWARD, MARY J., Associate Professor Emerita, June 2000, BM Westminster, MM Florida St. (Music)
- HUDDLESTON, NORMAN R., Assoc. Professor Emeritus, September 1990, BS Tennessee Tech, MS Tennessee, PhD Mississippi St. (Agricultural Economics & Rural Sociology)
- HUDSON, FRED M., Professor Emeritus, December 1980, BSCE Purdue, MS Princeton (Civil Engineering)
- HUDSON, ROBERT S., Alumni Professor Emeritus, June 1988, DVM Oklahoma St, MS Auburn (Large An. Surg. & Med.)
- HUDSON, WILLIAM N., Professor Emeritus, June 2000, AB MA California, PhD California-Irvine (Mathematics)
- HUFFMAN, DALE L., Professor Emeritus, September 1995, BS Cornell, MS PhD Florida (Animal & Dairy Sciences, Director Emeritus, Food Technology Institute)
- HUMBURG, JAY M., Assoc. Professor Emeritus, August 2000, BS DVM Kansas St, MS Auburn (Large Animal Surgery & Medicine)
- HURST, JAMES R., Agricultural Economist Emeritus, September 1998, JD Jones Law, BS MS Auburn (Agricultural Economics & Rural Sociology)
- I to top
- ILLIES, ANDREAS J., Professor Emeritus, January 2010, BA New Hampshire, PhD Nebraska, MS Rochester Inst. Tech (Chemistry & Biochemistry)
- J to top
- JACKSON, JOHN D., Professor Emeritus, June 2012, PhD Claremont, BA MA Texas-Arlington (Economics)
- JACOBSON, MARCIA A, Hargis Professor Emerita, English, July 1999, BA MA PhD California (English)
- JAEGER, RICHARD C., Professor Emeritus, December 2007, PhD ME BSEE Florida (Electrical & Computer Engineering)

JAKEMAN, ROBERT J., Professor Emeritus, May 2011, PhD Auburn, MA Valdosta State, BA South Florida (History)

JANER, ANN L., Assoc. Professor Emerita, January 2006, MS Temple, BS Pharm Philadelphia (Pharmacy Practice)

JEMIAN, WARTAN A., Professor Emeritus, December 1993, BS Maryland, MS PhD Rensselaer Poly (Mechanical Engineering)

JENKINS, RHONALD M., Assoc. Professor Emeritus, August 2004, PhD Purdue, MS BS Florida St. (Aerospace Engineering)

JENKINS, STEPHEN R., Professor Emeritus, September 1995, BSCE Georgia Tech, MS PhD Harvard (Civil Engineering)

JENSEN, JOHN W., Professor Emeritus, March 2007, PhD MS Auburn, BS Minnesota (Fisheries & Allied Aquacultures)

JOHNSON, RANDALL, Professor Emeritus, 2003, PhD Ohio, MBA BS Embry Riddle (AVIATION AND SUPPLY CHAIN MANAGEMENT)

JOHNSON, CLARENCE E., Professor Emeritus, September 1998, BS Oklahoma St, MS PhD Iowa St. (Agricultural Engineering)

JOHNSON, EVERT W., Professor Emeritus, July 1986, BS New Hampshire, MF Yale, PhD Syracuse (Forestry)

JOHNSON, FREDERIC A., Assoc. Professor Emeritus, June 1992, BS MS New Hampshire, PhD Wisconsin ()

JOHNSON, GERALD W., Professor Emeritus, September 1995, BA Marshall, MA PhD Tennessee (Political Science)

JOHNSON, JAMES LAVAUGHN, Professor & Department Head Emeritus, November 2001, MS BS Auburn (College of Agriculture)

JOHNSON, MARTHA R., Asst. Professor Emeritus, January 2003, BS Georgia College MS Florida St. EdD North Carolina St.. (Alabama Cooperative Extension System)

JOHNSON, PAUL M., Associate Professor Emeritus, June 2012, PhD MA Stanford, BA Rice (Political Science)

JOHNSON, ROBERT E., Assoc. Professor Emeritus, September 1995, BME MME Kansas, PhD Michigan (Curriculum & Teaching)

JOHNSON, R. WAYNE, Professor Emeritus, 1987, PhD Auburn, MS, BA Vanderbilt (ELECTRICAL AND COMPUTER ENGINEERING)

JOHNSTON, JAMES M., Professor Emeritus, August 2009, PhD MA Florida, BA Tennessee (Psychology)

JONES, ALLEN W., Professor Emeritus, September 1991, BS MA Auburn, PhD Alabama (History)

JONES, EDWARD O., Professor Emeritus, June 1992, BSME BSEE Auburn, MSME Illinois (Mechanical Engineering)

JONES, ETHEL B., Professor Emerita, July 1996, AB Vassar, MA PhD Chicago (Economics)

JONES, WILLIAM R., Professor Emeritus, December 2003, PhD MS Virginia Tech, BS Mississippi St. (Animal Sciences)

JUDKINS, JOSEPH F., Professor Emeritus, July 2002, PhD BS MSSE Virginia Tech (Civil Engineering)

K to top

KANDHAL, PRITHVI S., Assoc. Director Emeritus, July 2001, BS Rajasthan India, MS Iowa St. (Asphalt Technology Center)

KAPLAN, BARBARA C., Professor Emerita, June 1990, BA Agnes Scott, MA Eastman, MA S. Florida, PhD Florida St. (Curriculum & Teaching)

KATAINEN, V. LOUISE., Assoc. Professor Emerita, July 2002, PhD California (Foreign Languages & Literatures)

KEITH, ROBERT E., Professor Emeritus, August 2010, PhD Virginia Tech, MS BS Florida State (Nutrition & Food Science)

KELLEY, VIRGINIA C., Assoc. Professor Emerita, July 1994, AB LaGrange, MS PhD Auburn (Botany & Microbiology)

KELLEY, WALTER D., Professor Emeritus, April 1994, BS MS Auburn, PhD North Carolina St. (Forestry)

KINCAID, STEVEN A., Professor Emeritus, October 2011, PhD MS DVM Purdue (Anatomy, Physiology and Pharmacology)

KINCEY, TRULY, Professor Emerita, September 1979, AB Montevallo, MA Tulane, PhD Ohio St. (Economics)

KING Jr, CHARLES C., Professor Emeritus, October 1986, BS MS Auburn, PhD North Carolina St. (Agronomy & Soils)

KINZER, EARL T., Assoc. Professor Emeritus, June 1993, BEP MS Auburn, PhD Virginia (Physics)

KITELEY, GARY W., Assoc. Professor Emeritus, June 1990, BS Minnesota, MS Purdue (Aerospace Engineering)

KLING, EMILY B., Extension Specialist Emerita, March 2010, BA Principia, MS Michigan, EdD Auburn (Alabama Cooperative Extension System)

KNECHT, CHARLES D., Professor Emeritus, June 1997, BS Maryland, MS Illinois, VMD Pennsylvania (Small Animal Surgery & Medicine)

KNOWLTON, STEPHEN F., Professor Emeritus, June 2012, PhD MIT, BA Middlebury (Physics)

KOUIDIS, VIRGINIA M., Associate Professor Emerita, Emeritus, May 2009, PhD MA Iowa, BA Michigan State (English)

KOZLOWSKI, YVONNE, Librarian Emerita, April 2003, BA MA MLS Washington ()

KOZLOWSKI JR, GEORGE ALOYSIUS, Professor Emeritus, 2007, PhD Michigan, BA Wesleyan (Mathematics & Statistics)

KRISHNAGOPALAN, GOPAL A., Professor Emeritus, January 2010, PhD MS Maine, BCHE Bombay (Chemical Engineering)

KRISTA, LAVERNE M., Professor Emeritus, September 1998, MS South Dakota St, DVM PhD Minnesota (Anatomy, Physiology & Pharmacology)

[L to top](#)

LABAND, DAVID, Professor Emeritus, August 2012, PhD MA BA Virginia Tech (Economics)

LAMKE, LEANNE K., Professor Emerita, September 2011, PhD MS Texas Tech, BA North Dakota (Human Development and Family Studies)

LANFORD, BOBBY L., Assoc. Professor Emeritus, January 2002, BS MS Clemson, PhD SUNY (School of Forestry & Wildlife Sciences)

LARSEN, HARRY S., Assoc. Professor Emeritus, July 1991, BS Rutgers, MS Michigan St, PhD Duke (Forestry)

LATIMER, DAN R., Professor Emeritus, December 2011, PhD MA Michigan, BA Texas (English)

LATIMER, MARGARET K., Assoc. Professor Emerita, June 1992, BA Agnes Scott, MA Vanderbilt (Political Science)

LATIMER, RENATE S., Assoc. Professor Emerita, May 2008, PhD MA Michigan, BA Wayne State (Foreign Languages & Literatures)

LAUMER JR., J. FORD, Professor Emeritus, April 2006, PhD Georgia, MBA BCE Auburn (Marketing)

LECHNER, JUDITH V., Professor Emerita, May 2009, PhD UCLA, MEd Auburn, MLS Columbia, BS CCNY (Educational Foundations, Leadership & Technology)

LECHNER, NORBERT M., Professor Emeritus, July 2006, MS Columbia BS BArch CUNY; (College of Architecture, Design & Construction)

LEDBETTER, WILLIAM N., Assoc. Professor Emeritus, June 1991, BSIE Alabama, MS Georgia Tech, PhD Oklahoma St. (Management)

LEISCHUCK, EMILY REAVES, Asst. to the President & Board of Trustees Emerita, September 1995, BS Alabama, MEd Auburn ()

LEISCHUCK, GERALD S., Executive Asst. to the President & Secretary to the Board of Trustees Emeritus, April 1997, AB MA N. Colorado, EdD Auburn ()

LEWIS, PHILIP M., Professor Emeritus, November 2008, PhD MA Syracuse, AB Hamilton (Psychology)

LEY, TERRY C., Professor Emeritus, May 2001, PhD MA (Curriculum & Teaching)

LINDHOLM, BYRON W., Assoc. Professor Emeritus, September 1995, BA Northwestern, PhD Illinois (Family & Child Development)

LISANO, MICHAEL, Assoc. Professor Emeritus, June 2000, BS MS Sam Houston, PhD Texas A&M (Zoology - Wildlife Sciences)

LITTLE, ALTON S., Assoc. Professor Emeritus, July 1977, BCE Auburn, MSCE Georgia Tech (Technical Services)

LITTLETON, TAYLOR D., Mosley Professor Emeritus, September 1995, BS MS PhD Florida St. (English)

LOCKROW, A. LYNN, Professor Emeritus, December 2008, BS E. Tennessee St.,MFA North Carolina-Greensboro (Theatre)

LOGUE Jr, HANCHEY E., Professor Emeritus, July 1993, BS MA Auburn (Journalism)

LONG, JAMES E., Professor Emeritus, December 2010, PhD Florida State,MS Florida State,AB Erskine (Economics)

LOVSHIN Jr, LEONARD L., Professor Emeritus, December 2003, PhD Auburn,MS Wisconsin,BS Miami (Fisheries & Allied Aquacultures)

LOWRY, JAMES L., Professor Emeritus, September 1995, BEE ME Auburn,PhD Florida (Electrical Engineering)

M to top

MACEINA, MICHAEL J., Professor Emeritus, February 2010, PhD Texas A&M,MS BS Florida (Fisheries)

MACINTIRE, DOUGLASS K., Professor Emeritus, December 2011, MS Auburn,DVM BS Texas A&M (Clinical Sciences)

MADRIGAL, JOSE A., Professor Emeritus, July 2008, PhD Kentucky,MA BA Michigan State (Foreign Languages & Literatures)

MAGHSOODLOO, SAEED, Professor Emeritus, 1966, PhD MS BS Auburn (Industrial Systems Engineering)

MANSFIELD, PHILLIP D., Associate Professor Emeritus, April 2003, DVM Auburn (Clinical Sciences)

MARCINKO, DOROTHY K., Librarian III Emerita, August 2002, EDS Auburn MLS Texas Woman's AB Phillipines (Ralph Brown Draughon Library)

MARION, JAMES E., Dean Emeritus College of Agriculture, September 1999, BS Berea,MS Kentucky,PhD Georgia (& Director Emeritus, AAES)

MARTIN, DAVID L., Professor Emeritus, January 1997, BA Redlands,MA PhD Claremont (Political Science)

MARTIN, JAMES E., President Emeritus, August 1993, BS Auburn,MS North Carolina St,PhD Iowa St. ()

MARTIN, NEIL R., Professor Emeritus, June 2000, BS MS Auburn,PhD Illinois (Agricultural Economics & Rural Sociology)

MARTIN, JOHN, Assoc. Professor Emeritus, December 1988, BS EdD Auburn,MA Alabama (Educational Leadership)

MARTINSON, TOM L., Professor Emeritus, September 2007, PhDKansas,BA Oregon (Geology & Geography)

MARTY, EDWARD C., Professor Emeritus, June 1972, BArch MArch Auburn (Building Tech.)

MCDANIEL, RANDALL S., Wayne T. Smith Distinguished Professor Emeritus, December 2010, EdD Auburn,MRC BSOT Florida (Special Education, Rehabilitation and Counseling)

MCGLYNN, FRANCIS D., Professor Emeritus, December 2010, PhD MA Missouri,AB Missouri Valley (Psychology)

MEADOWS, MARK E., Professor & Department Head Emeritus, January 1995, BS Georgia Southern,MA Peabody,EdD Georgia (Counseling & Counseling Psychology)

MELANCON, MICHAEL S., Professor Emeritus, May 2010, PhD MA Indiana,BA Loyola (History)

MELDAHL, RALPH S., Assoc. Professor Emeritus, September 2005, BS MS PhD Wisconsin (Forestry & Wildlife Sciences)

MELIUS, PAUL, Professor Emeritus, June 1991, BS Bradley,MS Chicago,PhD Loyola (Chemistry)

MELVILLE, JOEL G., Professor Emeritus, May 2009, PhD BS Penn State,MS Texas (Civil Engineering)

MELVIN, EMILY A., Associate Professor Emerita, May 2006, EdD MEd Virginia,BS Old Dominion (College of Education)

MEYER, DARRELL C., Professor Emeritus, January 1997, BA California St,MRP Pennsylvania (Architecture)

MILLER, RALPH E., Assoc. Professor Emeritus, June 2002, PhD Wayne St. MA Emporia St BS Kent St (Theatre)

MILLER, THOMAS, Assoc. Professor Emeritus, June 1987, BS Berry,MS Stout St,EdD Indiana (Educational Media)

MILLMAN, MARY M., Assoc. Professor Emerita, June 1994, AB Michigan,MA East Michigan,MA New York,EdD Georgia (Foreign Languages)

MILLMAN, RICHARD G., Professor Emeritus, October 1989, BArch MArch Michigan (Architecture)

MILTON, JAMES L., Professor Emeritus, January 1995, DVM MS Auburn (Small Animal Surgery & Medicine)

MIRARCHI, RALPH E., Professor Emeritus, February 2008, PhD MS Virginia Tech,BS Muhlenberg (Forestry & Wildlife Sciences)

MITREVSKI, GEORGE, Associate Professor Emeritus, June 2009, PhD Ohio State (Foreign Languages & Literatures)

MIZE, JACQUELYN, Professor Emeritus, December 2012, PhD Purdue, MS BA Georgia (Child Development Family Studies)

MOLTZ, FRED J., Professor Emeritus, September 1995, BS MSCE Drexel,PhD Stanford (Civil Engineering)

MONTJOY, ROBERT S., Professor Emeritus, September 2004, PhD Indiana,MA Alabama,BA Mississippi (Political Science)

MOORE, JANE B., Professor Emerita, September 1996, BA Judson,MS Tennessee,EdD Alabama (Health & Human Performance)

MOORE, WAYNE T., Professor & Carillonneur Emeritus, September 1995, AB Elon,AM EdD Columbia (Music)

MOORE Jr, E. B., Professor Emeritus, September 1978, AB MBA Syracuse,EdD Florida (Education Administration)

MORACCO, JOHN C., Professor Emeritus, September 1995, BS SUNY,MA Arizona St,PhD Iowa (Counseling & Counseling Psychology)

MORAN, MICHAEL J., Professor Emeritus, 1983, PhD Penn State,MA Wichita State,BS E. Stroudsburg State (COMMUNICATION DISORDERS)

MORAN, EDWIN T., Professor Emeritus, June 2011, BS Rutgers,MS PhD Washington State (Poultry Science)

MORGAN, ALICE S., Assoc. Professor Emerita, December 1986, BS Southern Mississippi,MA Alabama,EdD Auburn (Vocational & Adult Education)

MORGAN, JOE M., Professor Emeritus, August 2011, PhD MSSE Virginia Tech,BSCE Tennessee Tech (Civil Engineering)

MORGAN, JULIA M., Assoc. Professor Emerita, June 1998, BM MM Alabama (Music)

MORGAN, LAURENCE, Assoc. Professor Emeritus, June 1985, BM Alabama,MM Columbia (Music)

MORGAN, WILLIAM W., Professor Emeritus, January 1982, BBA Georgia,MS Georgia Tech (Industrial Engineering)

MORGAN-JONES, GARETH, Professor Emeritus, April 2011, PhD MS Nottingham,DSc BSc Wales (Entomology and Plant Pathology)

MORRIS IV, DREWRY H., Associate Professor Emeritus, June 2009, PhD North Carolina,MA Yale,BA Davidson (Foreign Languages & Literatures)

MORROW, PATRICK D., Professor Emeritus, May 2007, PhD MA Washington,AB Southern California (English)

MOSJIDIS, JORGE A, Professor Emeritus, May 2012, PhD California-Riverside,BAG Chile (Agronomy and Soils)

MOSS, BUELON R., Professor Emeritus, December 2003, PhD Tennessee,BS Berea (Animal Sciences)

MOUNT, ROBERT H., Professor Emeritus, September 1986, BS MS Auburn,PhD Florida (Zoology & Entomology)

MOUTON, JOHN C., Professor Emeritus, 1992, M.B.C Florida, BS NE Louisiana (BUILDING SCIENCE)

MULLEN, GARY R, Professor Emeritus, February 2010, PhD MS Cornell,BA Northeastern (Entomology & Plant Pathology)

MYLES, WILLIAM R., Assoc. Professor Emeritus, September 1977, BS MA Pittsburgh (Management)

McCORD, Sammy O., Assoc. Professor Emeritus, June 1998, BA MBA PhD Arkansas (Finance)

McCORD Jr, ROBERT WARREN, Extension St. Program Leader for Community Resource Development, October 2003, BS North Alabama,MS PhD Auburn (Alabama Cooperative Extension System & Professor Emeritus, Consumer Affairs)

McCULLERS, GAIL H., Director Emerita, October 2002, BS MEd Auburn (Housing & Residence Life)

McGUIRE, JOHN A., Professor Emeritus, October 1993, BS MS Mississippi St,PhD Auburn (Botany & Microbiology)

McGUIRE, ROBERT L., Professor Emeritus, August 1994, BS MS North Carolina St, PhD Kentucky (Animal & Dairy Sciences)

McKOWN, DELOS B., Professor & Head Emeritus, September 1995, BA Alma, BD Lexington Theo, MA Kentucky, PhD Florida St. (Philosophy)

McPHEETERS, E. KEITH, Professor Emeritus & Dean Emeritus, June 1989, BArch Oklahoma, MFA Princeton (Architecture)

N to top

NEELY, WILLIAM C., Professor, 1966, PhD LSU, MS LSU, BS Mississippi State ()

NELSON, BARBARA K., Posthumous Librarian Emerita, January 2007, BA Central Michigan, MA Michigan St, MLS Michigan (LIBRARY)

NEWKIRK, SANDRA, Assoc. Professor Emerita, May 2006, BS Purdue MS Indiana (Health & Human Performance)

NEWTON, DAVID S., Assoc. Professor and Assistant Dean Emeritus, September 1995, BBA BS MBA PhD Mississippi (Pharmacy Care Systems; Asst. Dean Emeritus, Pharmacy)

NEWTON, WESLEY P., Professor Emeritus, September 1987, AB Missouri, MA PhD Alabama (History)

NICHOLS, JAMES O., Assoc. Professor Emeritus, July 1993, BSAE MSE PhD Alabama (Aerospace Engineering)

NIEBUHR, ROBERT E., Assoc. Professor Emeritus, August 2001, BS Cincinnati, PhD MS Ohio St. (Management)

NIST, JOAN S., Professor Emerita, June 1992, AB Lawrence, MA Indiana, EdD Auburn (Educational Foundations, Leadership & Technology)

NOLAND, RONALD G., Assoc. Professor Emeritus, September 1991, BS MEd LSU, EdD Southern Mississippi (Curriculum & Teaching)

NORRIS, DWIGHT R., Professor Emeritus, 2007, PhD MBA Georgia, BS Valdosta State (College of Business)

NUNNALLY, THOMAS, Associate Professor Emeritus, June 2010, PhD MA Georgia, BA Alabama (English)

NUNNELLY, SUSAN C., Director Emerita of Campus Recreation, January 2008 (Student Affairs)

NUSBAUM, KENNETH E., Professor Emeritus, December 2010, PhD MS Georgia, DVM Cornell (Pathobiology)

O to top

OLSON, DOUGLAS J., Professor Emeritus, August 2001, MFA Cincinnati, BFA Layton (Art)

*ORGEN, A. TARIK., Professor, 1981, MArch Virginia, BArch Academy Fine Arts Istanbul (ARCHITECTURE)

OSWALD, SHARON L., Professor Emerita, August 2011, PhD Alabama MBA Alabama-Birmingham, BA Auburn (Management)

OWSLEY Jr, FRANK L., Professor Emeritus, September 1995, BA Vanderbilt, MA PhD Alabama (History)

O'BRIEN, J. FRED, Director Emeritus, October 1992, BME MME Auburn (Engineering Extension)

O'LEARY, VIRGINIA E., Professor Emerita, July 2006, PhD MA Wayne State, BA Chatham (Psychology)

P to top

PAINE, PAMELA F., Associate Professor Emerita, 2003, PhD Florida, MA Auburn, BA Florida State (FOREIGN LANGUAGES LITERATURES)

PANANGALA, VICTOR S., Professor Emeritus, 1994, DVM E. Pakistan Ag, MS Guelph, PhD Cornell (Pathobiology)

PARKER JR, FRAZIER, Professor Emeritus, May 2009, PhD MS Texas, BS Alabama (Civil Engineering)

PARKS, PAUL F., Provost Emeritus & Professor Emeritus, September 1993, BS MS Auburn, PhD Texas A&M (Animal & Dairy Science)

PEARSON, ROBERT E., Professor & Asst. Dean Emeritus, October 2002, MS BSPHarm Illinois (Pharmacy Care Systems)

PENDERGAST, PATRICK F., Assoc. Professor Emeritus, December 1992, BS John Jay, MPS Auburn (Political Science)

PERKINS, WARREN S., Professor Emeritus, June 1994, BS MS Clemson (Textile Engineering)

PERRICONE, CATHERINE, Professor Emerita, April 2005, BA Notre Dame, MA Oklahoma, PhD Tulane (Foreign Languages & Literatures)

PETERSON, CURT M., Professor Emeritus, July 1997, BS Moorehead St, PhD Oregon (Botany & Microbiology)

PETERSON, JOSEPH G., Assoc. Professor Emeritus, July 1981, BS MS Auburn (Chemistry)

PFEIL, EVA, Professor Emerita, June 1988, BID MVC Ulm Graduate School of Design, Certificate Psychology Zurich, PhD Walden (Industrial Design)

PHILLIPS, CHARLES L., Professor Emeritus, October 1987, BEE MSEE PhD Georgia Tech (Electrical Engineering)

PHILLIPS, PHYLLIS P., Assoc. Professor Emerita, June 1983, BS MEd EdD Auburn (Speech Pathology)

PHILLIPS, RAY C., Professor Emeritus, October 1982, BS Middle Tennessee St, MA Peabody, EdD Auburn (Educational Leadership)

PLUMB, JOHN A., Professor Emeritus, September 1998, BA Bridgewater, MS Illinois, PhD Auburn (Fisheries & Allied Aquaculture)

POPMA, THOMAS J., Assoc. Professor Emeritus, October 2001, BS MS Michigan St, PhD Auburn (Fisheries & Allied Aquacultures)

POTTER, MARY ANN R., Associate Professor Emerita, May 2010, EdD Auburn, MHE Georgia, BS Georgia Southern (Consumer Affairs)

POWELL, ARLIE A., Professor Emeritus, December 2003, BS MS PhD Florida (Horticulture)

POWERS, ROBERT D., Professor Emeritus, September 1995, BS PhD Tennessee, DVM Auburn (Pathology)

PRICE, CHARLES E., Professor Emeritus, 2007, PhD Georgia, MBA BBA Auburn (College of Business)

PRICE, MARK S., Professor Emeritus, June 2000, MFA BFA Illinois (Art)

PRITCHETT, JOHN F., Professor Emeritus, June 2004, PhD Iowa St MS BS Auburn (Biological Sciences)

PUCKETT, JOHN R., Professor Emeritus, September 1993, BS East Tennessee St, MS EdD Tennessee (Health & Human Performance)

PUGH, WILLIAM N., Assoc. Professor Emeritus, June 2004, PhD MS Florida St, BS Auburn (Finance)

PUROHIT, RAM C., Professor Emeritus, February 2006, PhD Auburn, MS Tuskegee DVM Rajasthan (Clinical Sciences)

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RAMEY, GEORGE E., Professor Emeritus, August 2007, BCE Auburn, MSCE Auburn, PhD Colorado (Civil Engineering)

RANKINS JR, DARRELL L., Professor Emeritus, 1989, PhD MS New Mexico State, BS Illinois (ANIMAL SCIENCES)

RASCH, RONALD H., Professor Emeritus, December 2003, BS Kansas St, PhD Texas, MS Air Force Inst. Tech (Accountancy)

REINKE, CARL M., Associate Professor Emeritus, May 2007, PharmD MS Michigan, BA Jamestown (Pharmacy Practice)

RENDEN, JOSEF A., Professor Emeritus, June 2001, PhD MS BS California-Davis (Poultry Science)

RICHARDSON, DON R., Professor Emeritus, August 1991, BA Auburn, MA PhD Ohio St. (Communication)

RIDDELL JR, M. GATZ, Professor Emeritus, June 2005, MS Auburn DVM Kansas St. (Clinical Sciences)

RIDGEWAY, LARRY D., Asst. Vice President Emeritus, September 1995, BS MA South Alabama (Student Affairs)

RILEY, RHETT E., Vice President Emeritus, July 1993, BS Auburn (Business & Finance & Treasurer)

RITLAND, RAYMOND W., Professor Emeritus, June 1972, BSC MA PhD Iowa (Economics)

ROBERTSON, BENJAMIN THOMAS, Professor Emeritus, October 1993, BS Kentucky, DVM MS Auburn (Veterinary Medicine)

ROBINSON, CECIL E., Assoc. Professor Emeritus, January 1991, BS Auburn, MA PhD Alabama (Mathematics)

RODEN, REBECCA H., Asst. Dean Emerita, June 1997, BS Auburn (Graduate School)

ROGERS, CHARLES M., Assoc. Professor Emeritus, September 1985, BA Lafayette, PhD Yale (Psychology)

ROGERS, WILMER A., Professor & Head Emeritus, September 1995, BS Southern Mississippi, MS PhD Auburn (Fisheries & Allied Aquacultures)

ROGERS JR, JACK W., Professor Emeritus, 2007, PhD MA BA Texas (Mathematics & Statistics)

ROLAND, DAVID A., Professor Emeritus, June 2010, BS PhD Georgia (Poultry Science)

ROSEN, MELVIN, Assoc. Professor & Head Track Coach Emeritus, September 1991, BS MS Iowa (Health & Human Performance)

ROSENBLATT, DAVID J., Archivist II Emeritus, August 2001, BA MA Missouri (Ralph Brown Draughon Library)

ROSS, CONRAD H., Professor Emeritus, October 1997, BFA Illinois, MFA Iowa (Art)

ROSSI, CHARLES R., Professor Emeritus, September 1993, BS DVM PhD Illinois, MS Ohio St. (Veterinary Medicine)

ROWSEY, ROBERT E., Professor Emeritus, May 2005, EdD Auburn MS BS Marshall (Curriculum & Teaching)

RUFFIN, BURLSON G., Assoc. Professor Emeritus, September 1995, BS MS Mississippi St, PhD Auburn (Animal & Dairy Sciences)

RUMPH, PAUL F., Professor Emeritus, 1999, MS DVM Auburn (Anatomy, Physiology & Pharmacology, October)

RYGIEL, DENNIS, Professor Emeritus, May 2008, PhD Cornell, MA BA Loyola (English)

S to top

SABA, RICHARD P., Professor Emeritus, December 2011, PhD Texas A&M, MBA BA Dallas (Economics)

SALTS, CONNIE J., Professor Emerita, August 2004, PhD Florida St, MA Kent St, BS Ohio St. (Human Development & Family Studies)

SAMPSON, GARY M., Professor Emeritus, August 2011, PhD Syracuse, MA BA Temple (Mathematics and Statistics)

SARTIN JR, JAMES L., Professor Emeritus, August 2012, PhD Oklahoma St., MA MS Auburn (Anatomy, Physiology and Pharmacology)

SAUSER, LANE D., Director Emerita, July 2012, BBA MBA DPA Alabama (College of Agriculture and Alabama Agricultural Experiment Station Business and Fiscal Administration)

SCHAER, WALTER, Professor Emeritus, June 1992, BAA Berne, MID Ulm, PhD Walden (Industrial Design)

SCHMITTOU, HOMER R., Professor Emeritus, April 1991, BS Tennessee Tech, MS PhD Auburn (Fisheries & Allied Aquacultures)

SELMAN, JAMES W., Assoc. Professor Emeritus, September 1995, BS MS EdD Florida St. (Vocational & Adult Education)

SFORZINI, RICHARD H., Professor Emeritus, July 1985, BS West Point, ME MIT (Aerospace Engineering)

SHELL, E. WAYNE, Professor Emeritus, February 1994, BS MS Auburn, PhD Cornell (Fisheries & Allied Aquacultures)

SHERLING, WILLIAM, Assoc. Professor Emeritus, October 1980, BAE Auburn, MSAE Georgia Tech (Aerospace Engineering)

SHEVLIN, PHILIP B., Professor Emeritus, June 2002, PhD MS Yale, BS LaFayette (Chemistry)

SHIELDS, ALAN J., Assoc. Professor Emeritus, September 1989, BA MA N. Texas St. (Sociology)

SHUMACK, ROBERT I., Professor Emeritus, April 2010, BS MA Auburn, PhD Michigan State (Horticulture)

SHUMACK, RONALD, Professor Emeritus, April 2010, BS MA Auburn, PhD Michigan State (Horticulture)

SHUMPERT, THOMAS H., Professor Emeritus, September 2000, BSEE MSEE PhD Mississippi St. (Electrical & Computer Engineering)

SILVERN, STEVEN B., Professor Emeritus, May 2008, BS MEd Maryland, PhD Wisconsin (Curriculum & Teaching)

SIMMS, JOHN D., Professor Emeritus, September 1992, BS Auburn, MA LSU (Journalism)

SIMON, MARLLIN L., Professor Emeritus, December 2010, PhD Missouri, MS Michigan State, BS Kansas State (Physics)

SIMPSON, STEPHEN T., Professor Emeritus, November 2007, BS DVM Auburn,MS Purdue (Clinical Sciences)

SKELTON, CHARLOTTE A., Professor & Dean Emerita, May 2005, BSN Alabama-Birmingham,MSN Med. College Georgia,EdD Auburn (School of Nursing)

SLAMINKA, EDWARD E., Professor Emeritus, August 2011, PhD MS Michigan,BS Case Western (Mathematics and Statistics)

SLATEN, BUSTER L., Professor Emeritus, June 2005, PhD Maryland,MS Arkansas,BS Arkansas A&M (Consumer Affairs)

SLATON, CHRISTA D., Professor Emerita, July 2010, PhD MA Hawaii-Manoa,BS Tennessee-Nashville * (Political Science)

SMITH, CURTIS R., Professor Emeritus, January 1991, BS MS PhD Southern Mississippi (Communication Disorders)

SMITH, DAVID M., Librarian III & Head Emeritus, July 1998, AB Huntingdon,MLS Emory (Cataloging, Ralph Brown Draughon Library)

SMITH, FLOYD S., Assoc. Professor Emeritus, September 1981, BSChE BSME MSChE Auburn (Mechanical Engineering)

SMITH, LEO A., Professor Emeritus, September 1995, BE M.E Georgia Tech,PhD Purdue (Industrial Engineering)

SMITH, PAUL C., Professor Emeritus, April 1996, DVM Auburn,MS Ohio St,PhD Iowa St. (Pathobiology)

SMITH, ROBERT C., Professor Emeritus, September 1995, BS Elmburst,PhD Illinois College of Medicine (Animal & Dairy Sciences)

SMITH, ROBERT E., Professor Emeritus, September 2010, BA Arizona State,PharmD Southern California (Pharmacy Practice)

SMITH, RONALD H., Professor Emeritus, December 2003, PhD MS BS Auburn (Entomology & Plant Pathology)

SMITH, THOMAS R., Professor Emeritus, May 2006, DMA Colorado,MA Iowa,BM Samford (Music)

SMITH, W. GAINES, Extension Director Emeritus, September 2011, BS MAg EdD Auburn (Alabama Cooperative Extension System)

SNOW, SAMUEL P., Professor Emeritus, September 1981, BS BLA MS Massachusetts,MLA Harvard (Architecture)

SNYDER, CHARLES A., Professor Emeritus, July 2006, PhD Nebraska,MS South Dakota St,MBA Ohio St. (Management)

SOLOMON JR., HARRY M., Professor Emeritus, May 2007, PhD MA Duke,BA Stephen Austin (English)

SOMERS, GREG L., Associate Professor Emeritus , 1987, PhD MS Virginia Tech, BS Oklahoma State (FORESTRY WILDLIFE SCIENCES)

SORJONEN, DONALD C., Professor Emeritus, January 2000, BS DVM Texas A&M,MS Auburn (Small Animal Surgery & Medicine)

SOUTH, DAVID B., Professor Emeritus, December 2010, PhD Auburn,MS BS North Carolina State (Forestry & Wildlife Sciences)

SPARROW IV, THOMAS W, Director Emeritus, June 2005, BS Auburn (Beard-Eaves-Memorial Coliseum)

SPEAKE, DANIEL W., Professor Emeritus, January 1995, BS MS PhD Auburn (Zoology & Wildlife Sciences)

SPEER, WILLIAM A., Professor Emeritus, June 1980, BS Arch Clemson MArch Rensselaer Tech (Architecture)

SPENCER, SAMIA I., Professor Emerita, May 2012, PhD MA Illinois,Lic Alexandria (Foreign Languages and Literatures)

SPENCER, WILLIAM A, Professor Emeritus, January 2008, BS Southern Illinois,MA PhD Illinois (Educational Foundations Leadership, & Technology)

SPRING, DONALD J., Assoc. Professor Emeritus, June 1998, BAE MAE Auburn,PhD Illinois (Aerospace Engineering)

STALLINGS, JAMES L., Assoc. Professor Emeritus, July 1991, BS MS Purdue,PhD Michigan St. (Agricultural Economics & Rural Sociology)

STARR, PAUL D., Professor Emeritus, May 2008, PhD MA Cal-Santa Barbara,AB Pacific (Communication & Journalism)

STAUFFER, BONNIE B., Assoc. Director Emerita, September 2008, BA MS New Mexico,EdD Northern (Outreach Program Office)

STEELE, H. ELLSWORTH, Professor Emeritus, April 1982, BA MA Nebraska,PhD Ohio St. (Economics)

STEISS, JANET E., Professor Emerita, June 2011, MSPT UAB PhD Georgia,DVM Guelph (Anatomy, Physiology and Pharmacology)

STEVENSON, R. EUGENE, Editor Emeritus, January 1992, BS Auburn (Research Information, Agricultural Experiment Station)

STRAIN, WILLIE L., Asst. Director Emeritus, April 1999, BS MEd Tuskegee,MS Wisconsin (Alabama Cooperative Extension System, & Assoc. Professor Emeritus, Journalism)

STRAITON JR, THOMAS H., Librarian III & Asst. Dean Emeritus, July 2005, MLS Alabama,BS Auburn (LIBRARY)

STRAWN, HARRY B., Extension Specialist & Professor Emeritus, December 2003, PhD MS Tennessee,BS North Carolina St. (Agricultural Economics & Rural Sociology)

STREET, DONALD R., Professor Emeritus, June 1994, BS MS Auburn,PhD Penn St. (Economics)

STRINGFELLOW, DAVID A., Professor Emeritus, June 2008, MS Auburn,DVM Cornell (Pathobiology)

STROTHER, GENE R., Assoc. Professor Emeritus, November 1998, BS MS PhD LSU (Entomology)

SWAIM, STEVEN F., Professor Emeritus, March 2003, MS Auburn DVM Kansas St. (Clinical Sciences)

SWANGO, LARRY, Professor Emeritus, March 2000, BS DVM Oklahoma St,PhD Purdue (Lab Animal Resources)

SWANSON, DONALD G., Professor Emeritus, September 2006, PhD MS Cal Tech,B.Theo Northwest Christian (Physics)

SZECHI, DANIEL, Professor Emeritus, May 2007, PhD Oxford,BA Sheffield (History)

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TABOR, RICHARD H., Professor Emeritus, June 2009, PhD Florida,MBA BS Tennessee (Accountancy)

TAMBLYN, JOHN W., Professor Emeritus, January 1991, BS BS Auburn,MMus PhD Rochester (Music)

TANG, RUEN C., Professor Emeritus, February 2007, BS Chung-Hsing,PhD North Carolina St. (Forestry & Wildlife Sciences)

TANJA, JON J., Assoc. Professor Emeritus, September 2001, BS Ferris St. MS Iowa (Pharmacy Practice)

TARRER, ARTHUR R., Professor Emeritus, June 2007, BS Auburn,MS Purdue,PhD Purdue (Chemical Engineering)

TAUGNER, AGNES B., Professor Emerita, June 1993, BFA MFA Illinois (Art)

TAYLOR, JANET B., Professor Emerita, September 2002, PhD Florida St. BS MEd Francis Marion (Curriculum & Teaching)

TEEM, DAVID, Professor Emeritus, May 2007, BS MS PhD Auburn University (Agronomy Soils)

TEIRLINCK, LUC M., Professor Emeritus, June 2011, PhD BS Vrije (Mathematics and Statistics)

THOMAS JR, ROBERT E., Professor Emeritus, December 2009, PhD MS Texas A&M,BIE Georgia Tech (Industrial & Systems Engineering)

THOMASSON, C. LARRY, Assoc. Professor Emeritus, October 1992, BS Cincinnati,PhD Florida (Pharmacy Practice)

THOMPSON, ANNE E., Assoc. Provost & Vice President Emerita, September 1994, BS Auburn,MA Maryland,EdD Oklahoma St. (University Outreach & Director Emerita of Alabama Cooperative Extension Service)

THOMPSON, EMMETT F., Dean & Professor Emeritus, June 1998, BS Oklahoma St,MS North Carolina St,PhD Oregon St. (Forestry)

THOMPSON, ISABELLE, Professor Emerita, May 2012, EdD MAT Duke,MA North Carolina State (English)

THORNE, JACK F., Professor Emeritus, January 1990, BS Auburn,MA PhD Alabama (Accountancy)

TILT, KENNETH M., Professor Emeritus, January 2012, PhD BS North Carolina State,MS East Carolina (Horticulture)

TINCHER Jr, WILBUR A., Professor Emeritus, September 1987, AB MA EdD Kentucky (Educational Leadership)

TOLE, THOMAS M., Assoc. Professor Emeritus, June 1998, BCE MBA PhD Oklahoma (Finance)

TORREJON, ALFREDO., Associate Professor Emeritus, May 2007, PhD MA SUNY – Buffalo (Spanish)

TRENTHAM, GARY L., Alumni Professor Emeritus, September 1995, BS MA Murray St,MFA Indiana (Consumer Affairs)

TRENTHAM, LANDA L., Professor Emerita, September 1995, BS Kentucky,MA Murray St,EdD Indiana (Education Foundations Leadership & Technology)

TURK, ELIZABETH S., Librarian III Emerita, December 1987, BA Tulane,MEd Auburn ()

TURNER, LOUISE, Assoc. Professor Emerita, September 1975, BA Southwest,MA MS LSU,PhD NYU (Health, Physical Education & Recreation)

TURNQUIST, PAUL K., Professor & Head Emeritus, September 1998, BS Kansas St,MS PhD Oklahoma St. (Agricultural Engin-eering)

TYSON, TED W., Professor Emeritus, January 2012, MS BSAE Georgia (Biosystems Engineering)

U to top

UHLIG, FRANK, Professor Emeritus, 1971/72, PhD MA California Inst. of Tech. (MATHEMATICS AND STATISTICS)

UNGER, VERNON E., Professor Emeritus, September 1998, BES MSMS PhD Johns Hopkins (Industrial & Systems Engineering)

UZUMERI, MUSTAFA V., Associate Professor Emeritus, August 2012, PhD Rensselaer,MBA York,BA Toronto (Aviation and Supply Chain Management)

V to top

VALINE, WARREN J., Professor Emeritus, September 1989, BS Hardin-Simmons,MEd Houston,PhD Georgia (Counseling & Counseling Psychology)

VAUGHAN, JOHN THOMAS, Dean Emeritus, September 1995, DVM MS Auburn (Veterinary Medicine)

VECELLIO, ROBERT L., Associate Professor Emeritus, September 2012, PhD MSCE BSCE Ohio State (Civil Engineering)

VILLAUME, WILLIAM A., Professor Emeritus, August 2011, PhD Ohio State,MDiv Luthern Theo,BA Waterloo (Pharmacy Care Systems)

VINSON, JOHNNIE B., Professor Emeritus, November 2007, BS MS Auburn,D Arts Mississippi (Music)

VIVES, DONALD L., Professor Emeritus, June 1987, BS MS Columbia (Chemical Engineering)

W to top

WADDELL, FRED E., Assoc. Professor Emeritus & Extension Family Resource Management Specialist, 2000, BS MS PhD Virginia Tech (Human Development & Family Studies, August)

WADE, LARKIN H., Professor Emeritus, July 1993, BS MS Auburn (Forestry)

WALDROP, HERBERT, Assoc. Professor Emeritus, June 2005, BS MS Auburn (Health & Human Performance)

WALKER, ROBERT P., Professor Emeritus, September 1994, BS Auburn,MS Inst. Textile Tech. (Textile Engineering)

WALLACE JR, RICHARD K., Professor & Director Emeritus, February 2008, PhD Auburn,MS Puerto Rico,BA Ohio Wesleyan (Fisheries & Allied Aquacultures)

WALSH, WILLIAM K., Professor Emeritus, January 2001, BS South Carolina,PhD North Carolina St. (Textile Engineering)

WALTERS, KENNETH W., Professor Emeritus, July 2000, BA Roosevelt,MA PhD Northwestern (Philosophy)

WARBINGTON, THOMAS L., Assoc. Professor Emeritus, June 1992, BS MA Mississippi (Foreign Languages)

WARD, CHARLOTTE E., Assoc. Professor Emerita, June 1994, BS MS Kentucky,MS PhD Purdue (Physics)

WARD, KEITH J., Director Emeritus, June 1998, BS MPA Brigham Young,PhD Tennessee (Center for Governmental Services)

WATERS JR, LUTHER, Professor Emeritus, May 2010, PhD Oregon State,MS BS Clemson (Horticulture)

WEAVER, ANDREW, M., August 2007, EdD MA Tennessee,BS Tennessee Tech (Professor Emeritus, Curriculum & Teaching)

WEBB, THOMAS R. , Associate Professor Emeritus, August 2007, BS Oregon State, PhD Iowa State (Chemistry Biochemistry)

WEEKS, JAMES R., Professor Emeritus, October 2007, BS MS Auburn (Entomology & Plant Pathology)

WEETE, JOHN D., Assoc. Dean & Professor Emeritus, September 1998, BS MS SF Austin St, PhD Houston (Sciences & Mathematics)

WEIDNER, WILLIAM E., Professor Emeritus, June 1992, BS MS Bowling Green, PhD Case-Western Reserve (Communication Disorders)

WERSINGER, JEAN-MARIE P., Associate Professor, 1979, PhD Ecole-Lausanne, BS Greable (PHYSICS)

WHITE, BONNIE J., Professor Emerita, December 2010, EdD Tennessee, MA Eastern Kentucky, MS Florida State, BA Evangel (Curriculum & Teaching)

WHITE, CHARLES R., Assoc. Professor Emeritus, September 1994, BS MS PhD Purdue (Industrial Engineering)

WHITE, J. HERBERT, Executive Director Emeritus, October 1993, BS Auburn (University Relations)

WHITLEY, R. DAVID, Professor Emeritus, December 2008, MS DVM Auburn (Veterinary Medicine)

WHITTENBURG, BOBBY L., Extension Animal Scientist & Assoc. Professor Emeritus, April 1994, MS Tennessee (Animal & Dairy Sciences)

WIDELL, ROBERT W., Assoc. Professor Emeritus, July 2009, PhD Stanford, AB Duke (Political Science)

WIGGINS, LORNA A., Librarian III Emerita, September 1995, BA Agnes Scott, MLS Emory ()

WILBANKS, JAMES R., Director Emeritus, March 1994, BME MME Auburn (Engineering Extension Service)

WILBANKS, MARY ELIZABETH, Librarian III, May 1985, AB Montevallo, MA Emory, MSLS North Carolina (Emerita)

WILKE, ARTHUR S., Professor Emeritus, January 2002, BS Wisconsin, MA PhD Minnesota (Sociology)

WILLIAMS, JAMES S., Professor Emeritus, 1982, MS Clemson, BS Toledo (BUILDING SCIENCE)

WILLIAMS, DOUGLAS F., Assoc. Professor Emeritus, June 1990, BA N. Michigan, MA Michigan, PhD Texas (Educational Foundations, Leadership & Technology)

WILLIAMS, ELIZABETH G., Assoc. Professor Emerita, June 1987, BS MS Auburn (Accountancy)

WILLIAMS, HUGH O., Alumni Professor Emeritus, June 1985, BAA Auburn, MA Columbia ()

WILLIAMS, JAMES C. III, Professor Emeritus, July 1997, BS MS Virginia Tech, PhD Southern California (Aerospace Engineering)

WILLIAMS, JOHN C., Professor Emeritus, September 1994, BS MS North Carolina St, PhD Iowa St. (Discrete & Statistical Sciences)

WILLIAMS, JOHN R., Professor Emeritus, December 2011, PhD North Carolina State, BS North Georgia (Physics)

WILLIAMS, MICHAEL L., Professor Emeritus, June 2012, PhD MS Virginia Tech, BS Arkansas St. (Entomology and Plant Pathology)

WILMOTH, JAMES N., Professor Emeritus, September 1995, BS Marshall, MS PhD Wayne St. (Vocational & Adult Education)

WILSON, ARLETTE C., Professor Emerita, June 2010, PhD Arkansas, MBA BBA Mississippi (Accountancy)

WILSON, DENNIS, Professor Emeritus, December 2008, BS Union, MS EdD Tennessee (Kinesiology)

WILT, GERALD R., Assoc. Professor Emeritus, January 1994, BS Western Kentucky, MS Clemson (Pathobiology)

WIT, LAWRENCE C., Assoc. Dean and Professor Emeritus, October 2012, PhD Missouri, MS Western Illinois, BS Wheaton (Biological Sciences)

WITT, BARBARA, Professor Emerita, February 2010, EdD Columbia, MSN BSN Connecticut (Nursing)

WOLFE, LAUREN G., Professor Emeritus & Head, October 2006, PhD MS DVM Ohio St. (Pathobiology)

WOLTERS, ROGER S., Professor Emeritus, July 2008, BBA MAc North Florida, PhD Illinois (Management)

WORLEY, S. D., Professor Emeritus, September 2009, PhD Texas, BS Auburn (Chemistry & Biochemistry)

WORTHINGTON, JAMES E., Assoc. Professor Emeritus. Accountancy, January 2000, BSBA Pittsburg St,MA PhD Missouri ()

WRIGHT, JONE P., Assoc. Professor Emerita, July 1991, BS MEd Georgia,PhD Alabama (Curriculum & Teaching)

WRIGHT, THOMAS L., Hargis Professor Emeritus, June 1991, BA MA PhD Tulane (English)

WRIGHT, THOMAS, Hargis Professor Emeritus , June 1991, BA MA PhD Tulane (ENGLISH)

WYLIE, ROY, Professor Emeritus, July 2007, BM SMU,MM Manhattan School of Music,D Mus Arts Texas (Music)

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YEAGER, JOSEPH H., Professor & Department Head Emeritus, January 1991, BS MS Auburn,PhD Purdue (Agricultural Economics & Rural Sociology)

YEAGER, LELAND B., Ludwig Von Mises Distinguished Professor Emeritus, March 1995, BA Oberlin,MA PhD Columbia (Economics)

YOO, CHAI H., Professor Emeritus, June 2007, PhD MS Maryland,BSCE Seoul National (Civil Engineering)

YOUNG, SAM W., Assoc. Professor Emeritus, June 1997, BA MS PhD Texas (Mathematics)

Z to top

ZENOR, PHILLIP L., Professor Emeritus, July 2009, BS MS PhD Houston (Mathematics & Statistics)

ZUK, GARY, Professor Emeritus, July 2009, BA Canisius,MS PhD Florida State (Political Science)

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Courses of Instruction

This section lists and describes all undergraduate and graduate courses taught by the departments of the university. The courses are presented by subject area and arranged in departmental order, alphabetically. The subject name (the heading in large type) is followed by the subject area code in parentheses.

Click **here** for Course Numbering logic

For schedule of courses, see the World Wide Web at www.auburn.edu/academic/au_academic.html and click "Course Schedule."

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Rehabilitation & Spec Educ - RSED (p. 937)
Religion - RELG (p. 943)
Rural Sociology - RSOC (p. 944)
Sciences & Math - SCMH (p. 945)
Secondary Education - CTSE (p. 946)
Social Work - SOWO (p. 948)
Sociology - SOCY (p. 949)
Statistics - STAT (p. 951)
Supply Chain Management - SCMN (p. 955)
Sustainability Studies - SUST (p. 956)
Theatre - THEA (p. 956)
Undergraduate Studies - UNDG (p. 961)
University Courses UNIV (p. 961)
Veterinary Medicine - VMED (p. 969)
VM-Biomedical Sciences VBMS (p. 964)
Wildlife Sciences - WILD (p. 973)
Women's Studies - WMST (p. 975)

Accounting - ACCT

Courses

ACCT 2110 PRINCIPLES OF FINANCIAL ACCOUNTING (3) LEC. 3. Basic accounting principles with focus on preparation and use of financial statements. Credit will not be given for both ACCT 2110 and ACCT 2810. Sophomore standing.

ACCT 2117 HONORS PRINCIPLES OF FINANCIAL ACCOUNTING (3) LEC. 3. Pr., Honors College. Basic accounting principles with focus on preparation and use of financial statements. Sophomore standing.

ACCT 2210 PRINCIPLES OF MANAGERIAL ACCOUNTING (3) LEC. 3. Pr., ACCT 2110 or ACCT 2117. Emphasis on cost accounting, budgeting, and decision making using managerial accounting information. Sophomore standing.

ACCT 2217 HONORS PRINCIPLES OF MANAGERIAL ACCOUNTING (3) LEC. 3. Pr., Honors College. ACCT 2117. Emphasis on cost accounting, budgeting, and decision-making using managerial accounting information. Spring. Sophomore standing.

ACCT 2700 BUSINESS LAW (3) LEC. 3. Introduction to contracts, sales, torts, ethics and the judicial system. Focus is on the business environment.

ACCT 2810 FUNDAMENTALS OF ACCOUNTING (3) LEC. 3. Principles of financial and managerial accounting. Not open to undergraduates majoring in Business. Credit will not be given for both ACCT 2110 and ACCT 2810.

ACCT 3110/3113 INTERMEDIATE ACCOUNTING I (3) LEC. 3. Pr., ACCT 2110 or ACCT 2117. Accounting principles and theory including accounting for current assets, liabilities, and investments. Junior Standing.

ACCT 3120/3123 INTERMEDIATE ACCOUNTING II (3) LEC. 3. Pr., ACCT 3110 or ACCT 3113. Grade of C or better. Continuation of ACCT 3110, with emphasis on fixed assets, capital structure, and cash flows. Junior Standing.

ACCT 3210/3213 COST ACCOUNTING (3) LEC. 3. Pr., ACCT 2110 or ACCT 2117. A study of how cost data for products, projects, or services are recorded, analyzed, and used for decision making. Junior standing.

ACCT 3310 BUSINESS PROCESSES AND INTERNAL CONTROLS (3) LEC. 3. Pr., P/C, ACCT 3110 or P/C, ACCT 3113. Developing knowledge of business processes, accounting for those business processes, and the internal controls surrounding such processes, both in a manual and computerized environment. Junior standing.

ACCT 3510/3513 ACCOUNTING INFORMATION SYSTEMS (3) LEC. 3. Pr., ACCT 3110 or ACCT 3113. Introduction to accounting information systems with emphasis on understanding computer-based systems and developing technology skills. Junior standing.

ACCT 4140/4143 SPECIAL TOPICS IN ACCOUNTING (3) LEC. 3. Pr., ACCT 3120 or ACCT 3123. A study of current issues in accounting theory and practice. Topics include regulations and economic and technological developments.

ACCT 4310/4313 AUDITING AND ASSURANCE SERVICES (3) LEC. 3. Pr., (ACCT 3120 or ACCT 3123) and ACCT 3310. Principles of auditing standards, ethics, controls, evidence, sampling, and audit reports. May count either ACCT 4310 or ACCT 4313.

ACCT 4410/4413 INCOME TAX I (3) LEC. 3. Pr., ACCT 3110 or ACCT 3113. Principles of federal taxation as it applies to individuals and property transactions.

ACCT 4900 DIRECTED STUDIES (1-3) IND. SU. Advanced individual research and study in accounting under the direction of a faculty member. Course may be repeated for a maximum of 6 credit hours.

ACCT 4920 ACCOUNTING INTERNSHIP (1-6) LEC. SU. Internship opportunity with an accounting firm, corporation, or governmental entity. Course may be repeated for a maximum of 6 credit hours.

ACCT 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. Course may be repeated for a maximum of 3 credit hours. Departmental approval.

ACCT 4997 HONORS THESIS (1-3) IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

ACCT 5130/5133 ADVANCED ACCOUNTING TOPICS (3) LEC. 3. Pr., ACCT 3120 or ACCT 3123. Emphasis on advanced accounting topics including business combinations, foreign currency transactions, derivatives, and other advanced financial topics.

ACCT 5310/5313 ADVANCED AUDITING AND ASSURANCE SERVICES (3) LEC. 3. Pr., ACCT 4310 or ACCT 4313. Advanced topics in auditing and assurance services. Departmental Approval.

ACCT 5420/5423 INCOME TAX II (3) LEC. 3. Pr., ACCT 4410 or ACCT 4413. Tax accounting for individuals, partnerships, corporations, estates, and trusts. Extensive use of a tax-service program.

ACCT 5610/5613 GOVERNMENTAL AND NOT-FOR-PROFIT ACCOUNTING (3) LEC. 3. Pr., ACCT 3120 or ACCT 3123. Accounting for governmental and not-for-profit entities. Focus on effective use of resources.

ACCT 5700/5703 ADVANCED BUSINESS LAW (3) LEC. 3. Pr., ACCT 2700 or ACCT 2990. Legal principles concerning secured transactions, bankruptcy, trusts and estates, partnership law, property, corporations, accountant's legal liability, and negotiable instruments.

ACCT 6130/6136 ADVANCED ACCOUNTING TOPICS (3) LEC. 3. Pr., ACCT 3120 or ACCT 3123. Emphasis on advanced accounting topics including business combinations, foreign currency transactions, derivatives, and other advanced financial topics.

ACCT 6310/6316 ADVANCED AUDITING AND ASSURANCE SERVICES (3) LEC. 3. Pr., ACCT 4310 or ACCT 4313. Advanced topics in auditing and assurance services.

ACCT 6420/6426 INCOME TAX II (3) LEC. 3. Pr., ACCT 4410 or ACCT 4413. Tax accounting for individuals, partnerships, corporations, estates and trusts. Extensive use of a tax-service program.

ACCT 6610/6616 GOVERNMENTAL AND NOT-FOR-PROFIT ACCOUNTING (3) LEC. 3. Pr., ACCT 3120 or ACCT 3123. Accounting for governmental and not-for-profit entities. Focus on effective use of resources.

ACCT 6700/6706 ADVANCED BUSINESS LAW (3) LEC. 3. Pr., ACCT 2700 or ACCT 2990. Legal principles concerning secured transactions, bankruptcy, trusts and estates, partnership law, property, corporations, accountant's legal liability, and negotiable instruments.

ACCT 7110/7116 RESEARCH IN ACCOUNTING (3) LEC. 3. Pr., ACCT 5130 or ACCT 5133 or ACCT 6130 or ACCT 6136. An evaluation, critique, and application of financial accounting theory to current reporting problems using current research tools and resources. Departmental approval.

ACCT 7120/7126 INTERNATIONAL ACCOUNTING (3) LEC. 3. Pr., ACCT 5130 or ACCT 5133 or ACCT 6130 or ACCT 6136. Accounting issues unique to international business activity. Departmental approval.

ACCT 7130/7136 FINANCIAL ANALYSIS & VALUATION (3) LEC. 3. Forecast of earnings and financial statements, valuation approaches and their application in accounting measurement, and financial reporting as a tool in management communication with investors. Departmental approval.

ACCT 7210/7216 ACCOUNTING FOR DECISION MAKING AND CONTROL (3) LEC. 3. Pr., ACCT 3210 or ACCT 3213. Relationship between management accounting and information systems and analysis of costs. Departmental approval.

ACCT 7310/7316 RISK ANALYSIS AND CONTROL (3) LEC. 3. Pr., ACCT 4310 or ACCT 4313. Analysis of strategic and business process risks and design of effective financial controls. Departmental approval.

ACCT 7410/7416 FEDERAL TAX RESEARCH (3) LEC. 3. Pr., ACCT 5420 or ACCT 5423 or ACCT 6420 or ACCT 6426. Sources of authority used in federal tax research and survey of tax policy issues. Departmental approval.

ACCT 7420/7426 CORPORATE AND PARTNERSHIP TAXATION (3) LEC. 3. Pr., ACCT 7410 or ACCT 7416. Tax issues involving corporations and partnership.

ACCT 7430/7436 TAXES AND DECISION MAKING (3) LEC. 3. Pr., ACCT 5420 or ACCT 5423 or ACCT 6420 or ACCT 6426. Emphasis on identifying, understanding, and evaluating tax planning opportunities. Departmental approval.

ACCT 7510/7516 INTEGRATED ACCOUNTING APPLICATIONS (3) LEC. 3. Pr., ACCT 3510 or ACCT 3513. Design and analysis of accounting information systems and relational databases. Departmental approval.

ACCT 7520 ENTERPRISE ACCOUNTING SYSTEMS (3) LEC. 3. Pr., ACCT 7510 or ACCT 7516. Design, analysis and use of Enterprise accounting systems.

ACCT 7710 GRADUATION REQUIREMENT (0) IND. SU. Last fall semester of program. Program residency required for graduation.

ACCT 7810/7816 BUSINESS ETHICS AND CORPORATE GOVERNANCE (3) LEC. 3. Pr., ACCT 3120 or ACCT 3123. Analyzing the impact of business ethics and corporate governance on business transactions. Departmental approval.

ACCT 7970/7976 ADVANCED SPECIAL TOPICS IN ACCOUNTING (3) LEC. 3. Pr., ACCT 7110 or ACCT 7116. Industry and technology issues in accounting.

ACCT 7980/7986 INTEGRATED ACCOUNTING TOPICS AND CASE ANALYSIS (3) LEC. 3. Final semester in Master of Accountancy Program or departmental approval; Capstone course for majors.

Adult Education - ADED

Courses

ADED 4010 LEARNING RESOURCES IN AREA OF SPECIALIZATION (3) LEC. 3. Pr., ADED 4050. Selecting, developing, utilizing, and evaluating instructional resources and technology for teaching. Departmental approval.

ADED 4050 METHODS OF TEACHING IN ADULT EDUCATION (3) LEC. 2. LAB. 2. Methods and techniques of instruction using appropriate instructional materials; planning and evaluation of instruction for programs within adult education.

ADED 4600 NATURE OF ADULT EDUCATION (3) LEC. 3. History and principles of adult education applied to the development and implementation of programs in remedial, occupational, continuing, and life-long learning.

ADED 4610 DIRECTED WORK EXPERIENCE (3) LEC. 3. SU. Pr., ADED 4600. In-service, supervised work experience individually designated for part-time or summer work experience. Departmental approval.

ADED 4620 COMMUNITY CONCEPTS, PROGRAMS, AND RESOURCES IN ADULT EDUCATION (3) LEC. 3. Pr., ADED 4600. Processes by which adult education is merged with community organizations to maximize the effective use of physical and human resources. Departmental approval.

ADED 4650 TEACHING THE DISADVANTAGED ADULT (3) LEC. 3. Pr., ADED 4600. Problems of the disadvantaged adult with emphasis on the unique sociological, psychological, and physiological factors that influence learning and participation in remedial learning activities. Departmental approval.

ADED 4660 TEACHING IN THE NON-SCHOOL SETTING (3) LEC. 3. Planning, conducting, and supervising instruction for adults in varied non-school settings. Departmental approval.

ADED 4900 INDEPENDENT STUDY (1-6) IND. Independent study directed toward desired objectives. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ADED 4910 PRACTICUM (1-6) PRA. SU. Experience relating theory and practice, usually carried on simultaneously. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ADED 4920 PROFESSIONAL INTERNSHIP IN ADULT EDUCATION (9) INT. 9. SU. Supervised internship experiences in a school or other appropriate setting. Evaluation and analysis of the internship experience. Or Minor.

ADED 4970 SPECIAL TOPICS (1-6) LEC. Current or special topics within adult education. Course Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ADED 7010/7016 LEARNING RESOURCES (3) LEC. 3. Selecting, developing, utilizing, and evaluating instructional resources and technology for teaching. May count either ADED 7010 or ADED 7016.

ADED 7050/7056 METHODS OF TEACHING IN ADULT EDUCATION (3) LEC. 3. Methods and techniques of instruction using appropriate instructional materials; planning and evaluation of instruction for programs within adult education.

ADED 7060/7066 CURRICULUM AND PROGRAM PLANNING IN ADULT EDUCATION (3) LEC. 3. Introduction to principles and practices involved in designing education programs in the area of specialization.

ADED 7600/7606 NATURE OF ADULT EDUCATION (3) LEC. 3. History and principles of adult education applied to the development and implementation of programs in remedial, occupational, continuing and life-long learning. May count either ADED 7600 or ADED 7606.

ADED 7620/7626 CONCEPTS, PROGRAMS, AND RESOURCES IN ADULT EDUCATION (3) LEC. 3. Processes by which adult education is merged with community organizations to maximize the effective use of physical and human resources. May count either ADED 7620 or ADED 7626.

ADED 7640/7646 WORKFORCE EDUCATION (3) LEC. 3. Identification and evaluation of basic skills problems in the workplace. Strategies for addressing workplace education issues.

ADED 7650/7656 TEACHING THE DISADVANTAGED ADULT (3) LEC. 3. Problems of the disadvantaged adult with emphasis on the unique sociological, psychological, and physiological factors that influence learning and participation in remedial learning activities. May count either ADED 7650 or ADED 7656.

ADED 7900 DIRECTED STUDIES (1-3) IND. SU. Independent study directed toward desired objectives. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

ADED 7910/7916 PRACTICUM (1-3) PRA. SU. Experiences closely relating theory and practice, usually carried on simultaneously. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

ADED 7920/7926 INTERNSHIP (1-10) INT. SU. Supervised internship experiences in a school, college or other appropriate setting. Evaluation and analysis of the internship experience. May count either ADED 7920 or ADED 7926. Course may be repeated for a maximum of 10 credit hours.

ADED 7950 SEMINAR (1-3) SEM. SU. Presentation of research projects, analysis of procedures, and findings. Course may be repeated for a maximum of 3 credit hours.

ADED 7960 READINGS (1-3) IND. Critical analysis of current and classical research and writings. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ADED 7970 SPECIAL TOPICS (1-6) LEC. Current or advanced topics within area of specialization. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ADED 7990 RESEARCH AND THESIS (1-10) MST. Individualized support and direction for students writing their thesis. Departmental approval. Course may be repeated with change in topics.

ADED 8900 DIRECTED STUDIES (1-6) IND. SU. Independent study directed toward desired objectives. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ADED 8910 PRACTICUM (1-6) PRA. SU. Experiences closely relating theory and practice, usually carried on simultaneously. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ADED 8920 INTERNSHIP (1-10) INT. SU. Supervised internship experiences in a school, college, or other appropriate setting. Evaluation and analysis of the internship experience. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

ADED 8950 SEMINAR (1-6) SEM. SU. Presentation by graduate students of research projects and/or analysis of procedures and findings. Course may be repeated for a maximum of 6 credit hours.

ADED 8960 SPECIAL PROBLEMS (1-6) IND. Critical analysis of current and classical research writings. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ADED 8970 SPECIAL TOPICS (1-6) LEC. Current or advanced topics within adult education. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ADED 8980 FIELD PROJECT (1-10) FLD. SU. Field project formulated, planned, conducted, evaluated, and reported in appropriate written form and oral formats under the direction of the student's major professor. Course may be repeated for a maximum of 10 credit hours.

ADED 8990 RESEARCH AND DISSERTATION (1-10) DSR. Individualized support and direction for students writing their dissertation. Course may be repeated for a maximum of 10 hours or departmental approval.

Aerospace Engineering - AERO

Courses

AERO 2200 AEROSPACE FUNDAMENTALS (2) LEC. 1. LAB. 3. Pr., ENGR 1110. Introduction to the fundamental physical concepts required for the successful design of aircraft and spacecraft.

AERO 3040 ELEMENTARY METEOROLOGY (3) LEC. 3. Basic principles, causes, effects and phenomena of weather with fundamental techniques of forecasting.

AERO 3110 AERODYNAMICS I (3) LEC. 3. Pr., MATH 2650. Properties of fluids, fluid statics, conservation of mass and momentum, atmospheric properties, two dimensional airfoils, three dimensional wings, drag, and flight performance.

AERO 3120 AERODYNAMICS II (3) LEC. 3. Pr., AERO 3110 and ENGR 2010. Principles of compressible flow including flows with area changes, friction and heat transfer. Fundamental analysis of aerodynamics and potential flow theory. Correlation of potential flow theory with experimental data.

AERO 3130 AERODYNAMICS LABORATORY (2) LEC. 1. LAB. 3. Pr., P/C, AERO 2200. Application of fundamental aerodynamic principles to subsonic and supersonic wind tunnel experiments.

AERO 3220 AEROSPACE SYSTEMS (3) LEC. 3. Pr., ENGR 2350 and MATH 2650. Modeling of system elements, classical feedback control techniques used in the analysis of linear systems, analysis of systems undergoing various motions connected with flight.

AERO 3230 FLIGHT DYNAMICS (4) LEC. 3. LAB. 3. Pr., AERO 3110 and ENGR 2350 and MATH 2650. Airplane performance and stability and control including analytical prediction of performance characteristics, experimental determination of static stability parameters, and analytical prediction of dynamic stability characteristics.

AERO 3310 ORBITAL MECHANICS (3) LEC. 3. Pr., ENGR 2350 and MATH 2650. Geometry of the solar system and orbital motion, mathematical integrals of motion, detailed analysis of two-body dynamics and introduction to artificial satellite orbits; Hohmann transfer and patched conics for lunar and interplanetary trajectories.

AERO 3610 AEROSPACE STRUCTURES I (2) LEC. 1. LAB. 3. Pr., ENGR 2070. Fundamental concepts employed in the mechanical testing of engineering materials and structures. Load, stress, and strain measurement techniques are utilized to determine material properties and structural response.

AERO 3970 SPECIAL TOPICS (1-3) AAB. SU. Departmental approval; Investigation of various topics in Aerospace Engineering. Course may be repeated for a maximum of 6 credit hours.

AERO 4140 AERODYNAMICS III (3) LEC. 3. Pr., AERO 3120. Theoretical background essential to a fundamental understanding of laminar and turbulent boundary layers and their relations to skin friction and heat transfer.

AERO 4510 AEROSPACE PROPULSION (4) LEC. 3. LAB. 3. Pr., AERO 3120. Fundamental analysis of airbreathing jet propulsion. Introduction to chemical rocket propulsion.

AERO 4620 AEROSPACE STRUCTURES II (4) LEC. 3. LAB. 3. Pr., AERO 3610 and MATH 2660. Aircraft and space vehicle structures. An introduction to the finite element method and its application to structural analysis. The laboratory will utilize state-of-the-art software numerical solution of aerospace structural systems.

AERO 4630 AEROSPACE STRUCTURAL DYNAMICS (4) LEC. 3. LAB. 3. Pr., AERO 4620. Free, forced and damped vibration of single and multiple degree-of-freedom systems. The laboratory will utilize state-of-the-art software for the analysis of the vibration and dynamic response of structural systems.

AERO 4710 AEROSPACE DESIGN I (3) LEC. 2. LAB. 3. Pr., AERO 3120. Introduction to the principles required to design aerospace vehicles.

AERO 4720 AEROSPACE DESIGN II (3) LEC. 2. LAB. 3. Pr., AERO 4710. This course is continuation of AERO 4710.

AERO 4730 SPACE MISSION DESIGN I (3) LEC. 2. LAB. 3. Pr., AERO 3310. Introduction to the design of space systems including the identification of launch requirements, spacecraft system components, satellite tracking and orbital analysis to achieve a stated scientific objective.

AERO 4740 SPACE MISSION DESIGN II (3) LEC. 2. LAB. 3. Pr., AERO 4730. A continuation of AERO 4730, Space Mission Design I.

AERO 4970 SPECIAL TOPICS IN AEROSPACE ENGINEERING (1-3) AAB. Investigation of current state-of-the-art technologies in aerospace engineering. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

AERO 4997 HONORS THESIS (1-3) IND. Pr., Honors College. Membership in the Honors College and departmental approval required; Directed research and writing of an honors thesis. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

AERO 4AA0 PROGRAM ASSESSMENT (0) LAB. SU. Pr., P/C, AERO 4710 or P/C, AERO 4730. Academic program assessment covering the areas of aerodynamics, aerospace structures, orbital mechanics, propulsion and vehicle design.

AERO 5110 MISSILE AERODYNAMICS (3) LEC. 3. Pr., AERO 3120. Coreq., AERO 4140. Aerodynamics of slender wing-body combinations, interference effects, linear and non-linear effects, applications to missile design and performance.

AERO 5120 ROTARY WING AERODYNAMICS (3) LEC. 3. Pr., AERO 3110. Aerodynamics and flight characteristics of rotary-wing aircraft.

AERO 5210 FLIGHT SIMULATION (3) LEC. 3. Pr., AERO 3230. Time domain simulation of nonlinear, six-degree-of-freedom motion of flight vehicles. Development of modular digital simulations including vehicle models for aerodynamics and propulsion, control, guidance subsystems.

AERO 5320 APPLICATIONS OF THE GLOBAL POSITIONING SYSTEM (3) LEC. 3. Operating principles of the control, space and user segments of the Global Positioning System. Implementation of post-processing and real-time positioning strategies and applications. Field work demonstrating the use of GPS receivers, data processing and position accuracy. Departmental approval.

AERO 5330 APPLIED ORBITAL MECHANICS (3) LEC. 3. Pr., AERO 3310. Special perturbation techniques: N-body perturbations; general and restricted three-body problems; preliminary orbit determination; C-W equations, targeting and rendezvous; constellation design; mission planning.

AERO 5340 SATELLITE APPLICATION (3) LEC. 3. Pr., AERO 3310. AERO 3310 or departmental approval; Principles related to the application of satellites to remote sensing, telecommunications, navigation and trajectory determination. Principles of space policy applied to both the unmanned and manned space flight programs.

AERO 5520 ROCKET PROPULSION (3) LEC. 3. Pr., AERO 4510. Analysis of the thermodynamics, gas dynamics and design of liquid and solid propellant rocket engines.

AERO 5530 SPACE PROPULSION (3) LEC. 3. Pr., AERO 4510. Analysis of space propulsion systems. Dynamics of electromagnetic systems, ion engines, photon drives, laser propulsion.

AERO 5620 DYNAMIC SIMULATION (3) LEC. 3. Pr., ENGR 2350. Computer techniques applied to the analysis of aerospace engineering problems using the digital problem-oriented language, Advanced Continuous Simulation Language (ACSL).

AERO 5630 AEROSPACE APPLICATIONS OF COMPOSITE MATERIALS (4) LEC. 3. LAB. 3. Pr., AERO 3610. Basic material and manufacturing information for laminated composite structures. Computational structural analysis of typical aerospace composite structures coupled with experimental verification of the structural response.

AERO 5750 LEGAL ASPECTS OF ENGINEERING PRACTICE (3) LEC. 3. Pr., PHIL 1020 or PHIL 1027. The role of the law in the manufacture of a product. Ethical issues that may confront designers and engineers.

AERO 6110/6116 MISSILE AERODYNAMICS (3) LEC. 3. Pr., AERO 3120. Coreq., AERO 4140 Aerodynamics of slender wing-body combinations, interference effects, linear and non-linear effects, applications to missile design and performance.

AERO 6120/6126 ROTARY WING AERODYNAMICS (3) LEC. 3. Pr., AERO 3110. Aerodynamics and flight characteristics of rotary-wing aircraft.

AERO 6210/6216 FLIGHT SIMULATION (3) LEC. 3. Pr., AERO 3230. Time domain simulation of nonlinear, six-degree-of-freedom motion of flight vehicles. Development of modular digital simulations including vehicle models for aerodynamics and propulsion, control, guidance subsystems.

AERO 6320/6326 APPLICATIONS OF THE GLOBAL POSITIONING SYSTEM (3) LEC. 3. Operating principles of the control, space and user segments of the Global Positioning System. Implementation of post-processing and real-time positioning strategies and applications. Field work demonstrating the use of GPS receivers, data processing, and position accuracy. Departmental approval.

AERO 6330/6336 APPLIED ORBITAL MECHANICS (3) LEC. 3. Pr., AERO 3310. Special perturbation techniques: N-body perturbations; general and restricted three-body problems; preliminary orbit determination; C-W equations, targeting and rendezvous; constellation design; mission planning.

AERO 6340/6346 SATELLITE APPLICATION (3) LEC. 3. Pr., AERO 3310. Principles related to the application of satellites to remote sensing, telecommunications, navigation and trajectory determination. Principles of space policy applied to both the unmanned and manned space flight programs. Departmental approval.

AERO 6520/6526 ROCKET PROPULSION (3) LEC. 3. Pr., AERO 4510. Analysis of the thermodynamics, gas dynamics and design of liquid and solid propellant rocket engines.

AERO 6530/6536 SPACE PROPULSION (3) LEC. 3. Pr., AERO 4510. Analysis of space propulsion systems. Dynamics of electromagnetic systems, ion engines, photon drives, laser propulsion.

AERO 6620/6626 DYNAMIC SIMULATION (3) LEC. 3. Pr., ENGR 2350. Computer techniques applied to the analysis of aerospace engineering problems using the digital problem-oriented language, Advanced Continuous Simulation Language (ACSL).

AERO 6630/6636 AEROSPACE APPLICATIONS OF COMPOSITE MATERIALS (4) LEC. 3. LAB. 3. Pr., AERO 3610. Basic material and manufacturing information for laminated composite structures. Computational structural analysis of typical aerospace composite structures coupled with experimental verification of the structural response.

AERO 6750/6756 LEGAL ASPECTS OF ENGINEERING PRACTICE (3) LEC. 3. Pr., PHIL 1020. The role of the law in the manufacture of a product. Ethical issues that may confront designers and engineers.

AERO 7100/7106 ADVANCED SUPERSONIC AERODYNAMICS (3) LEC. 3. Pr., AERO 4140. A rigorous development of linearized and nonlinear fluid flow theories and application. Lifting surfaces, lifting bodies, duct flow, boundary layer effects, shock and expansion waves and method of characteristics.

AERO 7110/7116 AIRFOIL AERODYNAMICS (3) LEC. 3. Pr., AERO 3120. Thin airfoil theory, Joukowski transformations, Karman Trefftz transformations, thick airfoil theory, panel methods and comparison with experimental data.

AERO 7120/7126 DYNAMICS OF VISCOUS FLUIDS I (3) LEC. 3. Pr., AERO 7100 or AERO 7106. Exact solutions to the Navier Stokes equations. Exact and approximate solutions of the laminar boundary layer equations. Incompressible and compressible boundary layers in theory and experiment.

AERO 7130/7136 DYNAMICS OF VISCOUS FLUIDS II (3) LEC. 3. Pr., AERO 7120 or AERO 7126. Turbulent flows, the Reynolds stresses and turbulence modeling. Computation of incompressible and compressible turbulent boundary layers. Stability theory and transition.

AERO 7140/7146 ADVANCED COMPUTATIONAL FLUID DYNAMICS (3) LEC. 3. Pr., AERO 5140 and AERO 6140. Advanced methods for solving problems in computational fluid dynamics. Topics include: discretization approaches, implicit solution techniques, curvilinear coordinate systems, and upwind schemes.

AERO 7200/7206 DYNAMICS OF FLIGHT (3) LEC. 3. Pr., AERO 3230. Development of specialized concepts and methods in dynamics applicable to the modeling of flight vehicle motion. Stability concepts and analysis of the stability of flight vehicle motions. Effects of variable mass and flexibility. Departmental approval.

AERO 7210/7216 FLIGHT DYNAMICS OF HYPERVELOCITY VEHICLES (3) LEC. 3. Pr., AERO 7200 or AERO 7206. Development of specialized concepts and methods in dynamics applicable to the modeling of hypersonic flight vehicle motion. Stability concepts and analysis of the stability of steady-state motions of very high speed flight vehicles. Departmental approval.

AERO 7220/7226 SPACECRAFT ATTITUDE DYNAMICS AND CONTROL (3) LEC. 3. Pr., AERO 7200 or AERO 7206. Development of specialized concepts and methods in dynamics applicable to the modeling of spacecraft rotational motion. Methods for controlling spacecraft attitude. Analysis of the attitude stability and controllability of spacecraft attitude motion. Department approval.

AERO 7230/7236 HELICOPTER DYNAMICS AND CONTROL (3) LEC. 3. Pr., AERO 7200 or AERO 7206. Development of specialized concepts and methods in dynamics applicable to the modeling of helicopters. Analysis of helicopter stability and controllability. Departmental approval.

AERO 7330/7336 ORBIT DETERMINATION (3) LEC. 3. Pr., AERO 6330 or AERO 6336. Elements of orbit determination; least squares, minimum norm, minimum variance solutions; batch, sequential and extended sequential filters.

AERO 7340/7346 ADVANCED ORBITAL MECHANICS (3) LEC. 3. Pr., AERO 6330 or AERO 6336. Elements of time measurements, earth orientation/coordinate system; f and g series; Lambert's Problem; linear orbit theory and circumlunar trajectories.

AERO 7350/7356 OPTIMAL CONTROL OF AEROSPACE VEHICLES (3) LEC. 3. Pr., AERO 3220. Principles of optimization; Pontryagin's principle; Linear quadratic regulator; Observers, state estimation, LQG problem. Optimal output feedback; Synthesis of flight control systems. AERO 3220 or equivalent.

AERO 7370/7376 FUNDAMENTALS OF THE GLOBAL POSITIONING SYSTEM (3) LEC. 3. Pr., AERO 7330 or AERO 7336. Principles of the Global Positioning System: GPS overview and historical development; modeling of pseudo-range and carrier phase measurements; positioning solution strategies using kinematic, dynamic, and reduced dynamic techniques. Departmental approval.

AERO 7390/7396 SATELLITE REMOTE SENSING (3) LEC. 3. Topics in satellite remote sensing principles and techniques including active and passive instruments, data processing, and geophysical parameter recovery algorithms. Departmental approval.

AERO 7510/7516 THRUST GENERATION (3) LEC. 3. Pr., AERO 4510. Aerothermodynamics of propulsion. Selected topics in gas dynamics, thermodynamics, and heat transfer as applied to airbreathing and space propulsion.

AERO 7520/7526 ADVANCED AIR-BREATHING PROPULSION (3) LEC. 3. Pr., AERO 4510. Topics emphasizing interaction between external aerodynamics and performance of airbreathing jet engines. Performance optimization of ramjet, turbojet, and turbofan engines. Component matching.

AERO 7530/7536 AEROTHERMOCHEM OF PROPULSION (3) LEC. 3. Pr., AERO 4510. Aerothermodynamics of compressible flow, chemical propellant characteristics, heat transfer in fluid flow, statistical gas dynamics, kinetic theory of gases.

AERO 7610/7616 ADVANCED AEROSTRUCTURES (3) LEC. 3. Pr., AERO 4620. Development of the fundamental principles of the analysis of non-linear problems in solid mechanics. Structural problems involving non-linear deflections and/or material properties. Departmental approval.

AERO 7620/7626 AEROSPACE COMPUTATIONAL STRUCTURAL ANALYSIS: STATIC STRUCTURES (3) LEC. 3. Pr., AERO 4620. Advanced techniques for the numerical solution of static elastic and plastic problems, including two and three dimensional solutions. Departmental approval.

AERO 7630/7636 AEROSPACE COMPUTATIONAL STRUCTURAL ANALYSIS: STRUCTURAL DYNAMICS (3) LEC. 3. Pr., AERO 4630. Advanced techniques for the numerical solution to problems in structural dynamics, including steady state and transient response of two- and three-dimensional structures. Departmental approval.

AERO 7640/7646 ADAPTIVE AERO-STRUCTURES (4) LEC. 3. LAB. 3. Basic material and manufacturing information for materials employed in adaptive structures. Shape-memory, magnetostrictive, magnetorheological-electrorheological and piezoelectric materials are examined. Departmental approval.

AERO 7660/7666 AEROLASTICITY (3) LEC. 3. Pr., AERO 4630. Introduction to the field of aeroelasticity and the interaction therein of structural mechanics and fluid mechanics with dynamics as the "interface adhesive" between them. Flutter, divergence, aileron reversal and related phenomena.

AERO 7670/7676 INTRODUCTION TO LARGE SPACE STRUCTURES (3) LEC. 3. Pr., AERO 4630. Large space structures and their unique concepts, novel on-earth testing requirements, variety of damping schemes and analysis techniques. Concepts and analysis related to shape control, active and passive damping, and structural dynamics/controls interaction.

AERO 7950 SEMINAR (1) LEC. 1. SU. Weekly lectures on current developments in aerospace sciences by staff members, graduate students, and visiting scientists and engineers.

AERO 7970/7976 SPECIAL TOPICS IN AEROSPACE ENGINEERING (1-3) LEC. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

AERO 7980/7986 AEROSPACE ENGINEERING PROJECT (3) LEC. 3. SU. Intended for students in the MAE program. On or off-campus project. The nature of the project is to be determined by the student's major professor. Approval of the project and its final written report by the student's advisory committee is required. Course may be repeated with change in topic. Departmental approval.

AERO 7990 RESEARCH AND THESIS (1-10) MST. Credit hours to be arranged. Course may be repeated with change in topics.

AERO 8990 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with change in topics.

Aerospace Studies (AFROTC) - AIRF

Courses

AIRF 1010 THE FOUNDATIONS OF US AIR FORCE (1) LEC. 1. Introduction to the US Air Force and Air Force ROTC.

AIRF 1011 AFROTC LEADERSHIP LABORATORY (0) LAB. 2. SU. Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

AIRF 1020 THE FOUNDATIONS OF US AIR FORCE (1) LEC. 1. Introduction to the US Air Force and Air Force ROTC.

AIRF 1021 AFROTC LEADERSHIP LABORATORY (0) LAB. 2. SU. Coreq., AIRF 1020 Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

AIRF 2010 EVOLUTION OF US AIR AND SPACE POWER (1) LEC. 1. Air and space power history, doctrine, capabilities and functions.

AIRF 2011 AFROTC LEADERSHIP LABORATORY (0) LAB. 2. SU. Coreq., AIRF 2010 Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

AIRF 2020 EVOLUTION OF US AIR AND SPACE POWER (1) LEC. 1. Air and space power history, doctrine, capabilities and functions.

AIRF 2021 AFROTC LEADERSHIP LABORATORY (0) LAB. 2. SU. Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

AIRF 3010 AIR FORCE LEADERSHIP STUDIES (3) LEC. 3. Pr., AIRF 2020. Coreq., AIRF 3011 Advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills and supervision concepts. Departmental approval.

AIRF 3011 AFROTC LEADERSHIP LABORATORY (0) LAB. 2. SU. Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

AIRF 3020 AIR FORCE LEADERSHIP STUDIES (3) LEC. 3. Pr., AIRF 3010. Coreq., AIRF 3021 Advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills and supervision concepts. Departmental approval.

AIRF 3021 AFROTC LEADERSHIP LABORATORY (0) LAB. 2. SU. Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

AIRF 4010 NATIONAL SECURITY AFFAIRS AND PREPARATION FOR ACTIVE DUTY (3) LEC. 3. Pr., AIRF 3020. For AFROTC senior cadets. The role of military officers in American society. Departmental approval.

AIRF 4011 AFROTC LEADERSHIP LABORATORY (0) LAB. 2. SU. Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

AIRF 4020 NATIONAL SECURITY AFFAIRS AND PREPARATION FOR ACTIVE DUTY (3) LEC. 3. Pr., AIRF 4010. For AFROTC senior cadets. The roles of military officers in American society. Departmental approval.

AIRF 4021 AFROTC LEADERSHIP LABORATORY (0) LAB. 2. SU. Coreq., AIRF 4020 Required AFROTC Leadership Laboratory for students who are pursuing a commission in the US Air Force. Departmental approval.

Africana Studies - AFRI

Courses

AFRI 2000 INTRODUCTION TO AFRICANA STUDIES (3) LEC. 3. Pr., (ENGL 1120 or ENGL 1127). An introduction to theory and method that offers an interdisciplinary perspective on Africa and the African Diaspora.

Agric Economics - AGECE

Courses

AGECE 3010/3013 AGRIBUSINESS MARKETING (3) LEC. 3. Pr., (ECON 2020 or ECON 2027) and (COMP 1000 or COMP 1003). Principles and problems of marketing farm and agribusiness products including marketing methods, channels, structures, and institutions.

AGECE 3050 FARM APPRAISAL (2) LEC. 2. Theory of land values; terminology, processes and procedures for alternative appraisal purposes; factors affecting value; and evaluation of appraisal methods.

AGEC 3080 FUTURES AND OPTIONS MARKETING (2) LEC. 2. Pr., (ECON 2020 or ECON 2027) and (COMP 1000 or COMP 1003). Functions, institutions, economic performance, and practices and procedures involved in utilizing futures and options markets to manage market price risks.

AGEC 3100 COMPUTER APPLICATIONS IN AGRICULTURAL ECONOMICS (3) LEC. 3. Pr., (COMP 1000 or COMP 1003) and (P/C, STAT 2010 or P/C, STAT 2510 or P/C, STAT 2610). Analytical methods for agricultural economics: for agricultural economics: spreadsheet applications, optimization, regression, budgeting, and risk management.

AGEC 3300 AGRICULTURAL POLICIES AND TRADE (3) LEC. 3. Pr., ECON 2020 or ECON 2027. Public policies affecting agriculture. Theory and significance of international trade, distribution of production and trade, issues and policies, and influence of exchange rates.

AGEC 3920 AGRICULTURAL BUSINESS AND ECONOMICS INTERNSHIP (1-3) INT. SU. Departmental approval. Practical experience with agricultural business firms and agencies including finance, farm supply, production, marketing and sales and government. Course may be repeated for a maximum of 6 credit hours.

AGEC 3950 CAREERS IN AGRICULTURAL BUSINESS AND ECONOMICS (1) LEC. 1. SU. To develop skills to find a job and learn about career opportunities in agricultural business and economics.

AGEC 4000 PRINCIPLES OF AGRIBUSINESS MANAGEMENT (3) LEC. 3. Pr., (ECON 2020 or ECON 2027). Economics and business principles applied to agriculture: business formation, composing and analyzing financial statements, financial analysis and decision-making functions of management, capital budgeting and investment decisions. (Credit will not be given to majors in AGECE, ECON, or business).

AGEC 4040 AGRICULTURAL FINANCE (3) LEC. 3. Pr., (ECON 2020 or ECON 2027) and (ACCT 2110 and P/C, ACCT 2210) or ACCT 2810 and P/C, AGECE 3100. Economic problems and policies in financing agriculture.

AGEC 4070 AGRICULTURAL LAW (3) LEC. 3. Recognition of legal problems associated with property ownership, contracts, torts, financing, estate planning and environmental controls and restrictions.

AGEC 4100 AGRICULTURAL COOPERATIVES (2) LEC. 2. Principles and problems of organizing and operating farmers' cooperative buying and selling associations.

AGEC 4120 ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS (3) LEC. 3. Economic principles related to common property, public goods, property rights, externalities and resource scarcity and allocation applied to current issues.

AGEC 4960 SPECIAL PROBLEMS IN AGRICULTURAL ECONOMICS (1-2) IND. Departmental approval. Individual or group projects with a faculty member in agricultural economics or agribusiness. May include research, data analysis or a combination of these. Course may be repeated for a maximum of 4 credit hours.

AGEC 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. Membership in the Honors College required; Topics in agricultural economics. Course may be repeated for a maximum of 3 credit hours.

AGEC 4970 SPECIAL TOPICS IN AGRICULTURAL ECONOMICS (1-3) LEC. SU. May be repeated with change of topic. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

AGEC 4980 UNDERGRADUATE RESEARCH (2-4) IND. Directed research in the area of specialty within the department. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

AGEC 4997 HONORS THESIS (1-3) LEC. 3. Pr., Honors College. Directed research and writing of honors thesis. Course may be repeated for a maximum of 3 credit hours.

AGEC 5010 FARM MANAGEMENT (3) LEC. 3. Pr., MATH 1680 and (ECON 2020 or ECON 2027) and (STAT 2010 or STAT 2510 or STAT 2610) and ACCT 2110. Principles of economics applied to agriculture; uses of farm records to improve management of the farm; developing enterprise budgets and use in preparing a profit-maximizing farm plan.

AGEC 5030 AGRICULTURAL PRICES (3) LEC. 3. Pr., ECON 3020 and MATH 1690 and (STAT 2610 or STAT 2510 or STAT 2010). Functions of prices and principles of supply and demand in price determination for agricultural products and markets. Statistical estimation of price and demand relationships. Spring.

AGEC 5090 RESOURCE ECONOMICS I (3) LEC. 3. Pr., ECON 3020. Supply, demand, future requirements and availability of natural resources plus institutional framework affecting and conditioning such use through property rights, zoning, taxation, etc.

AGEC 5100 AGRICULTURAL BUSINESS MANAGEMENT (3) LEC. 3. Pr., (ECON 2020 or ECON 2027) and AGECE 3100 and P/C, AGECE 4040 and ACCT 2210. Principles and problems in acquiring or starting, organizing, and operating successful agribusiness; financial and operational efficiency; human resource and public relations; decision-making tools.

AGEC 5210 ADVANCED AGRIBUSINESS MANAGEMENT (3) LEC. 3. Pr., AGECE 5100 and ECON 3020 and MATH 1690 and (STAT 2510 or STAT 2610). Case studies, managerial economics.

AGEC 6010 FARM MANAGEMENT (3) LEC. 3. Pr., COMP 1000 and ECON 3020. Principles of economics applied to agriculture; uses of farm records to improve management of the farm; developing enterprise budgets and use in preparing a profit-maximizing farm plan.

AGEC 6030 AGRICULTURAL PRICES (3) LEC. 3. Pr., ECON 3020 and MATH 1690 and (STAT 2510 or STAT 2610). Functions of prices and principles of supply and demand in price determination for agricultural products and markets. Statistical estimation of price and demand relationships. Spring.

AGEC 6090 RESOURCE ECONOMICS I (3) LEC. 3. Pr., COMP 1000 and ECON 3020. Supply, demand, future requirements and availability of natural resources plus institutional framework affecting and conditioning such use through property rights, zoning, taxation, etc.

AGEC 6100 AGRICULTURAL BUSINESS MANAGEMENT (3) LEC. 3. Pr., (ECON 2020 or ECON 2027) and COMP 1000 and AGECE 4040 and ACCT 2210. Principles and problems in acquiring or starting, organizing, and operating successful agribusiness; financial and operational efficiency; human resource and public relations; decision-making tools.

AGEC 6210 ADVANCED AGRIBUSINESS MANAGEMENT (3) LEC. 3. Pr., AGECE 6100 and ECON 3020 and MATH 1690 and (STAT 2510 or STAT 2610). Case studies, managerial economics.

AGEC 7000 ADVANCED AGRICULTURAL AND ENVIRONMENTAL POLICY (3) LEC. 3. Pr., (AGECE 6090 and AGECE 4300) or AGECE 6030. Food and farm problems and related governmental actions from historical, political and analytical viewpoints. Welfare economics and other procedures used to evaluate costs and benefits of existing and proposed governmental programs and actions affecting agriculture, environment and the consumer.

AGEC 7010 ADVANCED FARM MANAGEMENT (3) LEC. 3. Pr., AGECE 6010. Advanced theory and application of farm management principle principles and economic concepts to agriculture. Planning, implementation, and control of various types of farms for optimum utilization of available resources.

AGEC 7030 ADVANCED AGRICULTURAL PRICES (3) LEC. 3. Pr., AGECE 6030 and ECON 6020. Theory and measurement of farm supply, retail demand and marketing-margin relationships. Introduction to equilibrium-displacement modeling.

AGEC 7080 PRODUCTION ECONOMICS I (3) LEC. 3. Pr., ECON 6020. Resource allocation and efficiency of production in the firm, between firms, and between agriculture and other industries.

AGEC 7090 RESOURCE ECONOMICS II (3) LEC. 3. Pr., AGECE 6090. Analysis of institutional and economic factors affecting use of natural resources including economic feasibility/conservation, benefit-cost analysis, environmental controls and other interventions.

AGEC 7100 OPERATIONS RESEARCH METHODS IN AGRICULTURAL ECONOMICS (3) LEC. 3. Optimization techniques with emphasis on linear programming and its extensions applied to agriculture. General theoretical background and associated computational procedures are used for presentation of models and modeling techniques.

AGEC 7110 AGRICULTURAL ECONOMIC DEVELOPMENT (3) LEC. 3. Pr., ECON 2020 or ECON 2027. Conceptual and empirical analysis of economic development with emphasis on the lesser developed areas and countries. Analysis of financial and technical aid to other countries case studies of development problems.

AGEC 7200 AQUACULTURAL ECONOMICS I (3) LEC. 3. Pr., ECON 2020 or ECON 2027. Application of economic theories and principles to production, marketing, and consumption of aquacultural enterprises and products. Role of aquaculture in economic development.

AGEC 7250 AQUACULTURAL ECONOMICS II (3) LEC. 3. Pr., AGECE 7200. Application of advanced economic theory and principles of production, marketing, and consumption of aquacultural products. Analysis of comparative role and competitive position of aquaculture in economic development and resource allocation.

AGEC 7590 INTRODUCTION TO AGRICULTURAL ECONOMETRICS (3) LEC. 3. Pr., (MATH 1610 or MATH 1617) and STAT 2610. Regression analysis in economic research. Model specification and estimation plus introduction to detection and correction of violations of assumptions of OLS. Hypothesis testing, dummy variables, heteroschedasticity, autocorrelation and measurement errors.

AGEC 7690 MICROECONOMETRICS IN AGRICULTURAL ECONOMICS I (3) LEC. 3. Pr., AGEC 7590. The focus will be on implementation and interpretation, as well as on the microeconomic foundations of the econometric models covered in the course.

AGEC 7700 RESEARCH METHODS IN AGRICULTURAL ECONOMICS (3) LEC. 3. Pr., ECON 7130 and AGEC 7590. Overview of the philosophy of science, detailed discussion of how various research tools are used to perform applied research in agricultural economics.

AGEC 7950 GRADUATE SEMINAR (1) SEM. 1. SU. A forum for sharing research information and interaction on topics and issues of current interest.

AGEC 7960 SPECIAL PROBLEMS IN AGRICULTURAL ECONOMICS (1-3) AAB. Departmental approval required; Individualized direction/instruction by faculty on research, teaching and/or outreach issues. Course may be repeated for a maximum of 6 credit hours.

AGEC 7970 SPECIAL TOPICS IN AGRICULTURAL ECONOMICS (3) LEC. 3. Departmental approval. New topics in agricultural and applied economics.

AGEC 7990 RESEARCH AND THESIS (1-10) MST. Course may be repeated with change in topics.

AGEC 8060 THEORY OF AGRICULTURAL MARKETS (3) LEC. 3. Pr., AGEC 7590 and ECON 6020. Theory and methods for estimating complete demand systems (e.g., LES, Translog, ALIDS, and Rotterdam) for food products. Introduction to imperfect competition models.

AGEC 8080 PRODUCTION ECONOMICS II (3) LEC. 3. Pr., AGEC 7080. Firm-level economics problems are extended. Consideration of the influence of risk on firm behavior; empirical analysis of theoretical problems; welfare analysis; technical change; impacts of research investments.

AGEC 8090 FOOD AND AGRICULTURAL POLICY (3) LEC. 3. Pr., ECON 6020 or ECON 7000 or ECON 7110. The course will cover current issues in the economics and policies associated with food, food production and marketing.

AGEC 8310 MICROECONOMETRICS IN AGRICULTURAL ECONOMICS II (3) LEC. 3. Pr., AGEC 7690. The focus will be on implementation and interpretation, as well as on the microeconomic foundations of the econometric models covered in the course.

AGEC 8690 TOPICS IN AGRICULTURAL MICROECONOMETRICS (3) LEC. 3. Pr., AGEC 8310. This course is meant to assimilate knowledge acquired throughout core coursework in the Agricultural Economics PhD program.

AGEC 8890 MICROECONOMETRICS IN AGRICULTURAL ECONOMICS II (3) LEC. 3. Pr., AGEC 7690. The focus will be on implementation and interpretation, as well as on the microeconomic foundations of the econometric models covered in the course. May count either AGEC 8310 or AGEC 8890.

AGEC 8990 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with change in topics.

Agriculture - AGRI

Courses

AGRI 1000 INTRODUCTION TO AGRICULTURE (2) LEC. 1. LAB. 2. Provide information about the College of Agriculture and Alabama Agriculture. An emphasis will be placed on learning about the different departments in the college.

AGRI 1080 AGRICULTURAL COMMUNICATIONS (3) LEC. 3. Introduction to agricultural communications and professional development as applied to the ag sector; overviews of common communication methods and possible careers. Departmental approval.

AGRI 3800 AGRICULTURAL LEADERSHIP DEVELOPMENT (2) LEC. 1. LAB. 2. Programmed sessions and activities designed to enhance self-awareness of leadership skills and enable students to become effective leaders.

AGRI 4000 AGRICULTURE STUDY ABROAD (1-10) AAB/FLD. Study abroad programs with emphasis on agricultural topics. Credit awarded in consultation with departmental chair. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

AGRI 4920 INTERNSHIP IN AGRICULTURAL COMMUNICATION AND LEADERSHIP (1-3) INT. Supervised, closely monitored work experience in agricultural communications or leadership. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

AGRI 4970 SPECIAL TOPICS IN AGRICULTURAL COMMUNICATION AND LEADERSHIP (1-3) LEC. Directed study in agricultural communications or leadership. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

AGRI 5840 ADVANCED AGRICULTURAL LEADERSHIP DEVELOPMENT (3) LEC. 2. LAB. 2. Pr., AGRI 3800. Critical analysis of theory and practice of contemporary leadership processes and principles of learning to lead through service.

AGRI 6840 ADVANCED AGRICULTURAL LEADERSHIP DEVELOPMENT (3) LEC. 2. LAB. 2. Critical analysis of theory and practice of contemporary leadership processes and principles of learning to lead through service.

Agronomy And Soils - AGRN

Courses

AGRN 1000/1003/1004 BASIC CROP SCIENCE (4) LEC. 3. LAB. 2. Agronomic principles of classification, growth, structure, and soil-plant relationship of field crops, with emphasis on influence of man and environment, and importance of crop production. Credit will not be given for both AGRN 1000 and AGRN 1003/1004.

AGRN 2040/2043/2044 BASIC SOIL SCIENCE (4) LEC. 3. LAB. 2. Pr., (CHEM 1010 and CHEM 1011) or (CHEM 1030 and CHEM 1031). Formation, classification, properties, management, fertility and conservation of soils in relation to the growth of plants. Fall, Spring.

AGRN 2910 TURFGRASSES: USES AND CARE FOR SPORTS AND LEISURE (2) LEC. 2. Introduction to the commonly used turfgrasses of the southeastern United States including of these turfgrasses for golf courses, athletic fields and home lawns will be included. This course may not be substituted for AGRN 3150.

AGRN 3100 SOILS IN AGRICULTURAL AND EARTH SYSTEMS (4) LEC. 3. LAB. 2. Pr., GEOL 1100 and CHEM 1010. The role of the soils as key components in changing earth and agricultural systems. Intended for those who will teach earth science at the middle school level. Credit will not be given for AGRN 3100 and either AGRN 2040 or AGRN 3040. Spring, Summer, Fall.

AGRN 3120/3123 PRINCIPLES OF WEED SCIENCE (4) LEC. 3. LAB. 2. Pr., BIOL 1020 and AGRN 2040. Weed identification and biology, methods of weed management and classification of herbicides and how they are used in weed control. Laboratory subjects are weed identification and sprayer calibration. Fall.

AGRN 3150/3153/3154 TURFGRASS MANAGEMENT (4) LEC. 3. LAB. 2. Pr., AGRN 2040 and BIOL 1020. The management of recreational and home area turfgrass will be studied including establishment and maintenance of turf and the effect of light, traffic, soil fertility and water on its growth. Fall, Spring.

AGRN 3200 APPLIED TURF MANAGEMENT (3) LEC. 1. LAB. 4. Pr., P/C, AGRN 3150. Familiarize students with the operation and maintenance of the equipment used for turfgrass maintenance. Effects on turfgrass performance will also be covered.

AGRN 3920 AGRONOMY AND SOILS INTERNSHIP (3) INT. 3. Practical experience under the supervision of an approved employer and the department. Internship may be in the areas of production, business, turf or science. Departmental approval.

AGRN 3960 SPECIAL PROBLEMS IN AGRONOMY AND SOILS (2) LAB. 2. Departmental approval. Individual and group problems investigations in crop, soil or weed science. Course may be repeated for a maximum of 4 credit hours.

AGRN 3970 SPECIAL TOPICS IN AGRONOMY AND SOILS (3) ST1. 3. New topics in agronomy and soils.

AGRN 4000 ADVANCED CROP SCIENCE (3) LEC. 3. Pr., (AGRN 1000 or BIOL 1030) and AGRN 2040. Application and integration of principles from undergraduate agricultural, biological and physical sciences courses in the management of crop production systems.

AGRN 4010 FORAGE PRODUCTION AND UTILIZATION (3) LEC. 3. Grass and legume forage crops. The crops are considered from the standpoint of (a) pasture crops, (b) hay and silage crops, (c) soil-improving crops. Spring.

AGRN 4200 SOIL JUDGING (2) LEC. 1. LAB. 4. Description, evaluation and interpretation of soil-profile characteristics. Fall.

AGRN 4210 ADVANCED SOIL JUDGING (2) LEC. 1. LAB. 2. Pr., AGRN 4200. Advanced description, evaluation, and interpretations of soil-profile characteristics. Spring.

AGRN 4950 SENIOR SEMINAR (2) LEC. 2. This course will cover professional presentations, both oral and written, in the area of Agronomy and Soils.

AGRN 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

AGRN 4980 UNDERGRADUATE RESEARCH (2-4) IND. Directed research in the area of specialty within the department. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

AGRN 4997 HONORS THESIS (1-3) IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

AGRN 5000 SOILS ENVIRONMENTAL QUALITY (3) LEC. 3. Pr., AGRN 2040. Role of soils in bio-geochemical cycling of major elements and compounds of environmental concern; interactions of pollutants with soils and aquatic and atmospheric environments; methods to minimize or correct pollution; risk assessment.

AGRN 5010/5013 ANALYSIS OF PLANT, SOIL, AND ANIMAL DATA (3) LEC. 3. Pr., MATH 1130 or STAT 2510. Principles of data analysis based on real examples will be discussed. Topics include measures of central tendency, dispersion, confidence intervals, sampling issues, probability distributions, etc.

AGRN 5020 NUTRIENT MANAGEMENT (3) LEC. 3. Pr., AGRN 2040. Lectures and problems illustrate principles of nutrient management as related to soil or growth media, plant, fertilizer practices, management systems and environment. Required for all students majoring in Agronomy and Soils. Spring.

AGRN 5060/5063 SOIL MICROBIOLOGY LECTURE (3) LEC. 3. Pr., BIOL 3200. Ecology, physiology, and biochemistry of soil microorganisms with emphasis on soil microbial processes that are important to environmental quality and soil productivity. Spring.

AGRN 5061 SOIL MICROBIOLOGY LABORATORY (1) LAB. 1. Pr., P/C, AGRN 5060 or P/C, AGRN 5063. Laboratory exercises illustrating ecology, physiology, and biochemistry of soil microorganisms. Credit will not be given for both AGRN 5061 and AGRN 5063. Spring.

AGRN 5080/5083 SOIL RESOURCES AND CONSERVATION (4) LEC. 3. LAB. 2. Pr., AGRN 2040. Soils as a natural resource for land-use planning; their use and management for sustainable crop production, urban and industrial development and ecosystem protection. AGRN 5080 Summer. AGRN 5083 Fall.

AGRN 5100/5103 PLANT GENETICS AND CROP IMPROVEMENT (3) LEC. 3. Pr., BIOL 1030 or BIOL 1037. Principles related to mendelian, population, and molecular genetics of plants including inheritance of qualitative and quantitative traits, and plant transformation. Improvement of crop plants including heritability, role of environment, pedigree selection, recurrent selection, the backcross method, and marker-assisted selection. Fall

AGRN 5150 SOIL MORPHOLOGY (4) LEC. 3. LAB. 2. Pr., AGRN 2040. Physical, chemical and mineralogical properties of soils are studied in relation to their distribution and classification for environmental, engineering and agricultural use and interpretations. Spring.

AGRN 5160/5163 ADVANCED TURFGRASS MANAGEMENT (3) LEC. 3. Pr., AGRN 3150. Factors affecting the turfgrass plant as a component of a dynamic community. Influence of soil chemical and physical conditions, management practices and climate are discussed. Theoretical and practical aspects of turfgrass management practices are discussed along with design and construction of golf courses and other athletic purpose turf areas.

AGRN 5180 SPORTS TURF MANAGEMENT (3) LEC. 3. Pr., AGRN 3150 and AGRN 2040. Design, construction and management of sports fields and the turfgrass cover on such fields.

AGRN 5200 APPLIED WEED SCIENCE TECHNOLOGY (3) LEC. 3. SU. Pr., AGRN 3120. Advanced weed identification, pesticide application technology, identification of herbicide injury symptomology, and develop of interaction techniques and problem solving skills for dealing with potential herbicide efficacy problems. Course may be repeated for a maximum of 6 credit hours.

AGRN 5300/5303 SOIL CHEMISTRY (4) LEC. 3. LAB. 2. Pr., AGRN 2040. An introduction to the basic soil chemical properties of mineral composition, weathering, absorption, cation exchange, acidity, alkalinity, salinity and soil reactions with fertilizers, pesticides and heavy metals. Spring.

AGRN 5400/5403 BIOENERGY AND THE ENVIRONMENT (3) LEC. 3. The role of bioenergy in reducing environmental problems related to use of fossil fuels and certain agricultural practices, and in addressing declining rural economies.

AGRN 5590 ENVIRONMENTAL SOIL PHYSICS (4) LEC. 3. LAB. 2. This course is designed to make the students understand basic soil physical properties and processes occurring in soils. All concepts are based on sound physical and mathematical principles. May count either AGRN 5590 or AGRN 6590.

AGRN 5960 SPECIAL PROBLEMS (1-3) IND. Work under the direction of a staff member on special problems in crop, soil or weed science. Course may be repeated for a maximum of 6 credit hours.

AGRN 5970 ADVANCED SPECIAL PROBLEMS AGRONOMY AND SOILS (1-3) IND. Departmental approval. Work under the direction of faculty on special problems in crop, soil or weed science, including results of agronomic research from the substations and experiment fields. Course may be repeated for a maximum of 6 credit hours.

AGRN 6000 SOILS AND ENVIRONMENTAL QUALITY (3) LEC. 3. Pr., AGRN 2040. Role of soils in bio-geochemical cycling of major elements and compounds of environmental concern; interactions of pollutants with soils and aquatic and atmospheric environments; methods to minimize or correct pollution; risk assessment.

AGRN 6010/6016 ANALYSIS OF PLANT, SOIL, AND ANIMAL DATA (3) LEC. 3. Pr., MATH 1130 or STAT 2510. Principles of data analysis based on real examples will be discussed. Topics include measures of central tendency, dispersion, confidence intervals, sampling issues, probability distributions, etc.

AGRN 6020/6026 NUTRIENT MANAGEMENT (3) LEC. 3. Pr., AGRN 2040. Lectures and problems illustrate principles of nutrient management as related to soil or growth media, plant, fertilizer practices, management systems and environment. Required for all students majoring in Agronomy and Soils. Spring.

AGRN 6060/6066 SOIL MICROBIOLOGY LECTURE (3) LEC. 3. Pr., BIOL 3200. Ecology, physiology, and biochemistry of soil microorganisms with emphasis on soil microbial processes that are important to environmental quality and soil productivity. Spring.

AGRN 6061 SOIL MICROBIOLOGY LABORATORY (1) LAB. 1. Pr., P/C, AGRN 6060 or P/C, AGRN 6066. Laboratory exercises illustrating ecology, physiology, and biochemistry of soil microorganisms. Credit will not be given for both AGRN 5061 and AGRN 6061. Spring.

AGRN 6080/6086 SOIL RESOURCES AND CONSERVATION (4) LEC. 3. LAB. 2. Pr., AGRN 2040. Soils as a natural resource for land-use planning; their use and management for sustainable crop production, urban and industrial development and ecosystem protection. AGRN 6080 Summer. AGRN 6086 Fall.

AGRN 6100/6106 PLANT GENETICS AND CROP IMPROVEMENT (3) LEC. 3. Pr., BIOL 1030. Principles related to mendelian, population, and molecular genetics of plants including inheritance of qualitative and quantitative traits, and plant transformation. Improvement of crop plants including heritability, role of environment, pedigree selection, recurrent selection, the backcross method, and marker-assisted selection. Fall.

AGRN 6150 SOIL MORPHOLOGY (4) LEC. 3. LAB. 2. Pr., AGRN 2040. Physical, chemical and mineralogical properties of soils are studied in relation to their distribution and classification for environmental, engineering and agricultural use and interpretations. Spring.

AGRN 6160/6166 ADVANCED TURFGRASS MANAGEMENT (3) LEC. 3. Pr., AGRN 3150 and (BIOL 3100 or BIOL 6130). Factors affecting the turfgrass plant as a component of a dynamic community. Influence of soil chemical and physical conditions, management practices and climate are discussed. Theoretical and practical aspects of turfgrass management practices are discussed along with design and construction of golf courses and other athletic purpose turf areas. Spring.

AGRN 6180 SPORTS TURF MANAGEMENT (3) LEC. 3. Pr., AGRN 3150 and AGRN 2040. Design, construction and management of sports fields and the turfgrass cover on such fields.

AGRN 6200 APPLIED WEED SCIENCE TECHNOLOGY (3) LEC. 3. SU. Pr., AGRN 3120. Advanced weed identification, pesticide application technology, identification of herbicide injury symptomology, and develop of interaction techniques and problem solving skills for dealing with potential herbicide efficacy problems. Course may be repeated for a maximum of 6 credit hours.

AGRN 6300/6306 SOIL CHEMISTRY (4) LEC. 2. LAB. 4. Pr., AGRN 2040. An introduction to the basic soil chemical properties of mineral composition, weathering, absorption, cation exchange, acidity, alkalinity, salinity and soil reactions with fertilizers, pesticides and heavy metals. Spring.

AGRN 6400/6406 BIOENERGY AND THE ENVIRONMENT (3) LEC. 3. The role of bioenergy in reducing environmental problems related to use of fossil fuels and certain agricultural practices, and in addressing declining rural economies.

AGRN 6590 ENVIRONMENTAL SOIL PHYSICS (4) LEC. 3. LAB. 2. This course is designed to make the students understand basic soil physical properties and processes occurring in soils. All concepts are based on sound physical and mathematical principles. May count either AGRN 5590 or AGRN 6590.

AGRN 6960 SPECIAL PROBLEMS (1-3) IND. Conferences, problems and assigned reading in soils and crops, including results of agronomic research from the substations and experiment fields. Course may be repeated for a maximum of 6 credit hours.

AGRN 6970 ADVANCED SPECIAL PROBLEMS AGRONOMY AND SOILS (1-3) IND. Departmental approval. Work under the direction of faculty on special problems in crop, soil or weed science, including results of agronomic research from the substations and experiment fields. Course may be repeated for a maximum of 6 credit hours.

AGRN 7080/7086 EXPERIMENTAL METHODS (3) LEC. 3. Pr., STAT 7000. Experimentation in the agricultural sciences including experimental techniques, interpretation of research data, use of library references, and preparation of publications. Problems, assigned readings and lectures. Summer.

AGRN 7120 CYTOLOGY AND CYTOGENETICS (4) LEC. 2. LAB. 4. Pr., BIOL 3000. Cell structure and function with emphasis on cell reproduction and factors contributing to the evolution of organisms. Fall.

AGRN 7140/7146 CHEMISTRY AND USE OF HERBICIDES IN CROP PRODUCTION (4) LEC. 3. LAB. 2. Pr., CHEM 1040. Principles and use of herbicides in agronomic crops. Methods of herbicide application, including time, incorporation and formulation, the fate of herbicides in soil and the ecological impact on succeeding plant species. Fall.

AGRN 7150 SEMINAR IN GENETICS (1) SEM. 1. Pr., BIOL 3000. Reports by students and staff members on current research and literature in the field of genetics. Spring.

AGRN 7160 GENETIC DATA ANALYSIS (3) LEC. 3. Pr., (AGRN 5100 or AGRN 6100) and STAT 4020. Introduces procedures to study the genetic characteristics of individuals and populations. Computer models will be used to simulate genomes and traits. Application of quantitative methods to experimental populations used to plan breeding programs. Fall.

AGRN 7170/7176 ADVANCED PLANT BREEDING (3) LEC. 3. Pr., AGRN 7160. Estimation and interpretation of genetic variance components, heritability, selection response, yield stability indices and their effect on choice of breeding method. Recurrent selection theory and breeding for resistance to plant stresses.

AGRN 7180 CROP ECOLOGY (3) LEC. 3. Pr., (BIOL 6130 or AGRN 7250) and AGRN 2040. Analysis of structure and function of crop and pasture farming systems with emphasis on production processes and resource management.

AGRN 7190 ADVANCED FORAGE MANAGEMENT AND RESEARCH METHODS (3) LEC. 3. Principles involved in successful establishment, maintenance and management of crops used for grazing, hay and silage, and research methods related to this field. Field trips will be made to research stations and private farms to observe management practices. Spring.

AGRN 7250 CROP PHYSIOLOGY (3) LEC. 3. Pr., BIOL 3100. Integrates principles of plant physiology, biochemistry, ecology, and genetics as they relate to plant growth and development and crop yield. The effect of management practices and abiotic stress on plant growth and development will be discussed.

AGRN 7540 PRINCIPLES OF PLANT NUTRITION (3) LEC. 3. Pr., AGRN 6020. Processes of nutrient flux to plant roots growing in soil. Chemistry and properties of soil in relation to the nutrition and growth of plants. Summer.

AGRN 7550 SOIL AND PLANT ANALYSIS (4) LEC. 1. LAB. 6. Pr., CHEM 3050 and AGRN 6020. Principles, methods and techniques of quantitative chemical analysis of soils and plants applicable to soil science. Fall.

AGRN 7560 CLAY MINERALOGY (4) LEC. 3. LAB. 2. Crystal structure and properties of the important clay-size minerals of soils and clay deposits combined with identification techniques involving x-ray diffraction and spectroscopy, differential thermal analysis, electron microscopy, specific surface analysis, and infrared absorption.

AGRN 7950/7956 SEMINAR (1) SEM. 1. SU. Required of all graduate students in Agronomy and Soils. Fall, Spring. Course may be repeated for a maximum of 2 credit hours.

AGRN 7990/7996 RESEARCH AND THESIS (1-10) MST. Research and thesis on problems in the soil and crop sciences. Course may be repeated with change in topics.

AGRN 8570 PHYSICAL SOIL CHEMISTRY (3) LEC. 3. Pr., CHEM 6070 and AGRN 6300. Interpretation of soil properties and chemical reactions in terms of ion exchange, solubility diagrams, solutions equilibria, electrochemistry and electrokinetics of charged particles. Fall.

AGRN 8580 ADVANCED SOIL PHYSICS (3) LEC. 3. Pr., MATH 1720 and (PHYS 1600 or PHYS 1607) and AGRN 7590. Transport phenomena in soils. Physical principles and analysis of the storage and movement of water, solutes, heat, and gases in soils. Spring.

AGRN 8990 RESEARCH AND DISSERTATION (1-10) DSR. Research and dissertation on problems in the soil and crop sciences. Course may be repeated with change in topics.

Animal Sciences - ANSC

Courses

ANSC 1000 INTRODUCTION TO ANIMAL SCIENCES (4) LEC. 3. LAB. 2. The importance of livestock to agriculture and to the health and nutrition of a modern society. Livestock terminology, selection, reproduction, nutrition, management, marketing, and species characteristics of beef and dairy cattle, swine, sheep and horses.

ANSC 1100 ORIENTATION TO ANIMAL SCIENCES (1) LEC. 1. SU. An introduction to the departmental programs and personnel and how to make the most of the college experience. Breadth of career opportunities for animal science graduates.

ANSC 2000 COMPANION ANIMAL MANAGEMENT (3) LEC. 3. Practical aspects of behavior, nutrition, breeding, reproduction, health and management of dogs, cats and other animals generally considered to be human companions.

ANSC 2010 ANIMALS AND SOCIETY (3) LEC. 3. Ethical and scientific issues surrounding human-animal interactions and the role human-animal interactions play in modern society.

ANSC 2050 INTRODUCTION TO HORSE MANAGEMENT AND TRAINING (3) LEC. 1. LAB. 4. An introduction to the management, training, and enjoyment of horses.

ANSC 2150 SKILLS AND CONCEPTS OF EQUESTRIAN SPORTS (1) LAB. 4. Basic management and care of animals used in intercollegiate equestrian and rodeo sports. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

ANSC 2650 EQUINE BIOMECHANICS AND SHOEING (3) LEC. 2. LAB. 2. Pr., ANSC 1000 and BIOL 2500. Anatomy, function and care of the horse foot; mechanical forces and joint/tissues health; hoof traits, quality and correction through shoeing.

ANSC 2700 VALUE-BASED ANALYSIS OF MEAT ANIMALS (2) LAB. 4. Pr., ANSC 1000. Comparative evaluation of body composition and application of federal grading standards to determine relative value and price of live animals, carcasses, and wholesale cuts.

ANSC 2710 COMMERCIAL MEAT MANAGEMENT (4) LEC. 3. LAB. 2. The importance of meat in the food service industry, including food safety, purchasing, cooking and meat in the diet. For non-majors only.

ANSC 2720 INTRODUCTION TO MEAT SCIENCE (2) LEC. 2. Foundation course on the global meat industry with emphasis on meat products, modern processing techniques, concepts of food safety, sanitation, inspection, grading and meeting consumer demands.

ANSC 2910 PRACTICUM IN LIVESTOCK WELFARE AND MANAGEMENT (2) LAB. 6. Pr., ANSC 1000. Hands-on laboratory teaching applied management of livestock species, including horses, cattle, swine and small ruminants, using modern equipment and techniques. Departmental approval.

ANSC 3000 HERD HEALTH MANAGEMENT (3) LEC. 3. Pr., ANSC 1000 and BIOL 3200. The prevention and control of the major diseases of farm animals and the development of herd health programs.

ANSC 3150 EQUINE MARKETING (3) LEC. 2. LAB. 2. Pr., ANSC 1000 and (ECON 2020 or ECON 2027). Practical concepts of equine marketing including evaluating the horse, assessing the market, targeting customers, and presenting the horse.

ANSC 3300 INTRODUCTORY LIVESTOCK EVALUATION AND MARKETING (2) LAB. 6. Pr., ANSC 1000. Comprehensive study of live animal and carcass evaluation techniques used in the selection and marketing of beef cattle, swine and sheep. The development of decision-making oral communication skills is emphasized.

ANSC 3310 INTRODUCTION TO MEAT SELECTION AND GRADING (2) LAB. 6. Pr., ANSC 1000. Development of grading standards and application of federal grades to beef, pork and lamb carcasses. Comparative evaluation of carcasses, primal, and sub-primal cuts.

ANSC 3330 INTRODUCTION TO DAIRY CATTLE JUDGING (2) LAB. 6. Pr., ANSC 1000. Theory and practice in the selection of dairy cattle based on visual appraisal, pedigree, and performance records. The development and presentation of oral reasons also is emphasized.

ANSC 3350 EQUESTRIAN COACHING (3) LEC. 1. LAB. 4. Principles and practices of instructing students on horseback, safety for horse and rider, lesson plans and class management, evaluation of riders, teaching riders with special needs.

ANSC 3400 ANIMAL NUTRITION (4) LEC. 3. LAB. 2. Pr., BCHE 3200 and BIOL 1030 or (BIOL 1037). Principles and practice of animal nutrition, nutrient contents of feedstuff, and diet formulation. Departmental approval.

ANSC 3500 ANIMAL BREEDING (3) LEC. 3. Pr., ANSC 1000 and (STAT 2510 or STAT 2513 or BIOL 3000). Genetic and environmental effects of animal differences. Selection and mating systems used in the improvement of domestic animals with an emphasis on livestock.

ANSC 3600 REPRODUCTIVE PHYSIOLOGY (4) LEC. 3. LAB. 2. Pr., ANSC 1000 and BIOL 2510. Comparative anatomy, physiology and endocrinology of animal reproduction; principles of reproductive biotechnologies used to enhance reproductive efficiency in mammalian systems.

ANSC 3610 ANIMAL GROWTH AND DEVELOPMENT (4) LEC. 3. LAB. 2. Pr., ANSC 1000 and (BIOL 1030 or BIOL 1037). Biology of prenatal and postnatal growth of meat animals, emphasizing muscle, adipose, and bone tissues from a molecular, cellular, endocrine perspective. Application of concepts to improve rate, efficiency, and composition of growth.

ANSC 3650 PHYSIOLOGY OF EQUINE ATHLETE (3) LEC. 3. Pr., ANSC 1000 and BCHE 3200 and BIOL 2510. Selection and development of the horse for athletic performance; exercising, training, and fitness conditioning for performance horses.

ANSC 3700 MUSCLE FOODS (4) LEC. 3. LAB. 2. Pr., ANSC 1000. Introduction to domestic animal growth and development, comparative evaluation of livestock and carcass composition. Biochemical and physiological factors affecting fresh meat and processed meat quality. Fundamentals of ante-and postmortem muscle biology, slaughter, processing, storage and merchandising of meat and meat products.

ANSC 3760 VALUE BASED MARKETING OF LIVESTOCK (3) LEC. 2. LAB. 2. Livestock grading standards and their application to carcasses of meat producing animals, concepts and principles of marketing, advertising, promotion and sales of commercial livestock.

ANSC 3800 CAREERS IN ANIMAL SCIENCE (1) LEC. 1. SU. Career opportunities for animal science graduates. Identifying and investigating careers and presenting oneself professionally for employment or post-baccalaureate education.

ANSC 3840 STUDY/TRAVEL IN ANIMAL SCIENCE (1-10) AAB/FLD. Concentrated study in animal production and management, equine science and the meats industry within the US or international locations. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

ANSC 4000 MODERN LIVESTOCK SYSTEMS (4) LEC. 3. LAB. 2. Pr., ANSC 3400 and ANSC 3500 and ANSC 3600. Overview of beef, dairy, swine and small ruminant production systems. Modern concepts, ideas, and methodology associated with the application of technology to reproduction, breeding, health, nutrition, waste nutrient utilization, and management.

ANSC 4030 DAIRY CATTLE PRODUCTION (4) LEC. 3. LAB. 3. Pr., ANSC 3400 and ANSC 3500 and ANSC 3600. Practical application and integration of nutrition, breeding, reproduction, selection, herd health, economics, and management for efficient dairy production.

ANSC 4050 HORSE PRODUCTION (4) LEC. 3. LAB. 2. Pr., ANSC 3400 and ANSC 3500 and ANSC 3600. Practical application and integration of nutrition, breeding, reproduction, selection, herd health, economics and management for efficient horse production.

ANSC 4070 SWINE PRODUCTION (4) LEC. 3. LAB. 2. Pr., ANSC 3400 and ANSC 3500 and ANSC 3600. Practical application and integration of nutrition, breeding, and genetics, herd health, reproduction, economics, housing and management techniques for efficient swine production.

ANSC 4090 SHEEP PRODUCTION (4) LEC. 3. LAB. 2. Pr., ANSC 1000. Application and integration of breeding and selection, nutrition, reproduction, health, and marketing to achieve optimum lamb and wool production in the southeastern U. S.

ANSC 4100 FARM ANIMAL BEHAVIOR (2) LEC. 2. Pr., ANSC 3600. Basic information on behavior, its purpose, and measurement. Examination of eating, locomotive, sexual, aggressive, territorial, maternal, and resting behaviors in cattle, horses, swine, and sheep.

ANSC 4150 ADVANCED SKILLS AND CONCEPTS OF EQUESTRIAN SPORTS (1) LAB. 4. Pr., ANSC 2150. Principles and skills utilized in intercollegiate equestrian and rodeo team competition and management. Issues affecting management, training, marketing, and promotion of animals used in equestrian and rodeo sports. Course may be repeated for a maximum of 2 credit hours.

ANSC 4300 ADVANCED LIVESTOCK JUDGING (1) LAB. 4. Pr., ANSC 3300. Advanced course in principles and techniques of livestock selection based on visual criteria, performance records, and other advanced technologies. Course may be repeated for a maximum of 2 credit hours.

ANSC 4310 ADVANCED MEAT JUDGING (1) LAB. 4. Pr., ANSC 3310. Practice in evaluation and grading of beef, pork, and lamb carcasses and cuts. Development of communication skills and exposure to animal agriculture through training and intercollegiate competition. Course may be repeated for a maximum of 2 credit hours.

ANSC 4320 ADVANCED ANIMAL EVALUATION AND MARKETING (1) LAB. 4. Pr., ANSC 4300 or ANSC 4310. Live animal and carcass evaluation techniques used in marketing cattle, swine, and sheep.

ANSC 4330 ADVANCED DAIRY CATTLE JUDGING (1) LAB. 4. Pr., ANSC 3330. Advanced course in the selection of dairy cattle and presentation of oral reasons. Course may be repeated for a maximum of 2 credit hours.

ANSC 4450 EQUINE NUTRITION (3) LEC. 3. Pr., ANSC 3400. Principles of digestive physiology, nutrition, and metabolic disorders unique to the horse with special emphasis on nutritional needs of the equine athlete.

ANSC 4650 EQUINE REPRODUCTIVE TECHNIQUES (3) LEC. 1. LAB. 4. Pr., ANSC 3600. Reproductive management and application of modern technologies to enhance reproductive efficiency of the domestic horse.

ANSC 4700 MEAT PROCESSING (4) LEC. 3. LAB. 3. Pr., ANSC 3700. Integration of topics in meat and non-meat ingredient chemistry and their applications to muscle food processing. Physical, chemical, and sensory properties of fresh and processed meat products.

ANSC 4800 ISSUES IN ANIMAL AGRICULTURE (2) LAB. 4. Pr., COMM 1000. Issues affecting animal agriculture, dealing with concerns of consumers and activists, involvement in public debate, and the political process.

ANSC 4810 PROFESSIONAL DISCOURSE IN AGRICULTURE (1) LAB. 2. Pr., COMM 1000. Methods for enhancing effective discourse concerning issues facing the livestock industry.

ANSC 4920 INTERNSHIP IN ANIMAL SCIENCES (5-15) INT. SU. Departmental approval. Course may be repeated for a maximum of 15 credit hours.

ANSC 4960 SPECIAL PROBLEMS (1-5) IND. Students will work under the direction of staff members on specific problems. Or Departmental approval. Course may be repeated for a maximum of 15 credit hours.

ANSC 4967 HONORS SPECIAL PROBLEMS (3-6) IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ANSC 4970 SPECIAL TOPICS IN ANIMAL SCIENCES (1-4) IND. Instruction and discussion of selected current topics in Animal Sciences. Course may be repeated for a maximum of 4 credit hours.

ANSC 4980 UNDERGRADUATE RESEARCH (2-4) IND. Directed research in the area of specialty within the department. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

ANSC 4997 HONORS THESIS (3-6) IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ANSC 5010 BEEF PRODUCTION (4) LEC. 3. LAB. 2. Pr., ANSC 3400 and ANSC 3500 and ANSC 3600. Overview of the beef cattle industry. Modern concepts, ideas and methodology associated with the application of technology to reproduction, breeding, nutrition, management and the use of facilities in a modern beef cattle enterprise.

ANSC 5730 SENSORY EVALUATION (3) LEC. 2. LAB. 2. Pr., STAT 2510. History and methods of sensory testing of food products, factors affecting results. May count only one of the following: ANSC 5730, ANSC 6730, POUL 5730, POUL 6730.

ANSC 6010 STOCKER CATTLE PRODUCTION (4) LEC. 3. LAB. 4. Application of the principles of animal science to the successful production of stocker cattle. Emphasis placed on marketing and management strategies. Lab will involve a considerable amount of traveling.

ANSC 6730 SENSORY EVALUATION (3) LEC. 2. LAB. 2. Pr., STAT 2510. History and methods of sensory testing of food products, factors affecting results. May count only one of the following: ANSC 5730, ANSC, 6730, POUL 5730, POUL 6730.

ANSC 7400 RUMINANT NUTRITION (3) LEC. 3. Pr., BCHE 7210. Digestive physiology, mechanisms of rumen fermentation, postruminal nutritional biochemistry.

ANSC 7410 NONRUMINANT NUTRITION (3) LEC. 3. Digestion, absorption, and utilization of macro and micro nutrients, nutrient interrelationship in swine and other non-ruminant species. Departmental approval.

ANSC 7420 NUTRITIONAL TOXICOLOGY (3) LEC. 3. General principles of nutrition and toxicology applied toward understanding and managing livestock responses to toxicants in feeds and plants.

ANSC 7500 EXPERIMENTAL METHODS (3) LEC. 3. Pr., STAT 7010. Research methods used in the animal sciences for the analysis and interpretation of data. Included are experimental designs and computing techniques.

ANSC 7510 QUANTITATIVE GENETICS (3) LEC. 3. Pr., BIOL 3000 and STAT 7010. Principles of population genetics; gene frequency, biometric relationships between relatives, additive, dominance and epistatic effects, estimation and use of repeatability, heritability, genetic correlations, and breeding values. Departmental approval.

ANSC 7600 PHYSIOLOGY OF REPRODUCTION (3) LEC. 3. Pr., ANSC 3600 and BIOL 6240. Physiological, endocrinological, cellular, and molecular mechanisms regulating reproduction, with emphasis on mammalian systems.

ANSC 7610 PHYSIOLOGY OF GROWTH (3) LEC. 3. Pr., BCHE 7210. Molecular and cellular basis of tissue differentiation, growth and development with emphasis on muscle, adipose and connective tissues and factors influencing gene expression controlling such events.

ANSC 7700 MUSCLE FOODS AND APPLIED MUSCLE BIOLOGY (4) LEC. 3. LAB. 2. Pr., ANSC 3700 and BCHE 7210. Investigations of muscle microanatomy, biochemistry of muscle proteins and lipids, biochemistry of skeletal muscle contraction, lipid/protein interactions, antemortem and postmortem factors affecting fresh and processed meat quality; discussion of classic and current scientific literature.

ANSC 7950 SEMINAR (1) LEC. 1. SU. An intensive study of selected topics in some facet of animal sciences.

ANSC 7960 SPECIAL PROBLEMS (1-5) LEC. Conference problems, assigned reading, literature searches in one or more of the following major fields; (a) biochemistry, (b) nutrition, (c) animal breeding, (d) reproductive physiology, (e) growth physiology, (f) muscle foods, (g) microbiology, and (h) behavior. Course may be repeated for a maximum of 15 credit hours.

ANSC 7970 SPECIAL TOPICS IN ANIMAL SCIENCES (1-5) IND. Emerging topics in Animal Science and related industries. Course may be repeated for a maximum of 5 credit hours.

ANSC 7990 RESEARCH AND THESIS (1-15) MST. Research and thesis may be on technical laboratory problems or on problems directly related to beef and dairy cattle, sheep, swine, or laboratory animals. Course may be repeated with change in topics.

ANSC 8400 PROTEIN AND ENERGY METABOLISM (3) LEC. 3. Pr., BCHE 7210. Nutritional biochemistry of protein and energy metabolism of mammalian, avian and aquatic species. Concepts of protein turnover, nutrient-gene interactions, control of bioenergetics, nutritional assessment, nutritional quality of nutrient sources.

ANSC 8410 VITAMIN AND MINERAL METABOLISM (3) LEC. 3. Vitamin and mineral nutrition with emphasis on chemical structures and characteristics, metabolic functions, deficiencies and toxicity syndromes, interrelationships and requirements of vitamins and minerals. Departmental approval.

ANSC 8500 LINEAR MODEL APPLICATIONS IN ANIMAL BREEDING (4) LEC. 4. Pr., ANSC 7510 and STAT 7010. Selection index and mixed linear model genetic theory for estimation and prediction. Equivalent animal models, properties of solutions, and extension of methods to consider genetic relationships, multiple records, culling bias and multiple trait evaluation. Current literature will also be discussed.

ANSC 8610 MUSCLE PHYSIOLOGY AND BIOCHEMISTRY (3) LEC. 3. Pr., BCHE 7210 and BIOL 6600. Heterogeneity and plasticity of muscle as a tissue, ontogeny, differentiation, growth and regulation of metabolic and molecular properties of muscle fibers by innervation, usage, hormones, and artificial modulation. Evaluation of current literature.

ANSC 8990 DOCTORAL RESEARCH AND DISSERTATION (1-15) DSR. Course may be repeated with change in topics.

Anthropology - ANTH

Courses

ANTH 1000 INTRODUCTION TO ANTHROPOLOGY (3) LEC. 3. Social Science I Core. Introduction to the study of human evolution, early civilizations and globalization, linguistic and cultural problems using the four sub-fields of anthropology: biological/physical anthropology, archaeology, cultural anthropology and linguistics.

ANTH 1007 HONORS INTRODUCTION TO ANTHROPOLOGY (3) LEC. 3. Pr., Honors College. Honors introduction to the study of human evolution, early civilizations and globalization, linguistic and cultural problems using the four sub-fields of anthropology: biological/physical anthropology, archaeology, cultural anthropology and linguistics. Credit will not be given for both ANTH 1000 and ANTH 1007.

ANTH 2000 ETHNOGRAPHIC METHODS (3) LEC. 3. Pr., ANTH 1000 or SOCY 1000 or GEOG 1000. Approaches, techniques, and strategies for carrying out ethnographic research and analyzing qualitative data in the social sciences.

ANTH 2100 INTRODUCTORY ARCHAEOLOGY (3) LEC. 3. Pr., ANTH 1000. A broad introduction to archaeology, designed to introduce the history, principles, and methods of modern anthropological archaeology. Departmental approval.

ANTH 2310 RACE, GENDER, AND HUMAN VARIATION (3) LEC. 3. Social Science Core I. Explores the broad range of contemporary human biological variation in an evolutionary perspective and examines the social construction of race and gender, including associated problems of typological thinking in an historical context.

ANTH 2400 APPLIED ANTHROPOLOGY (3) LEC. 3. Social Science Core I. How anthropology issues to solve contemporary problems in non-academic environments. Areas such as social and environmental policy, international policy, epidemiology and medical anthropology, forensic anthropology, and archaeology are examined.

ANTH 2500 ANTHROPOLOGY OF GLOBAL STUDIES (3) LEC. 3. Social Science Core I. A broad-based study of processes and problems that transcend national boundaries, including global historical processes politics, migrations, trade, disease, environmental change, and sustainability.

ANTH 2600 FORENSIC ANTHROPOLOGY (3) LEC. 3. Social Science Core I. An introduction to the methods and procedures of forensic anthropological studies in archaeology and physical anthropology. Class includes both lectures and limited laboratory experience.

ANTH 2700 PEOPLES AND CULTURES OF ASIA (3) LEC. 3. Social Science Core I. An introduction to the traditions, religions, histories, and nation-states of the people of Asia, using a cultural approach.

ANTH 2800 ANTHROPOLOGY OF THE AFRICAN DIASPORA (3) LEC. 3. Social Science I Core. Anthropological perspectives on peoples of the African Diaspora. Archaeological, ethnohistorical, and contemporary research will be used to explore the lives of enslaved Africans and their descendants in the Caribbean, Latin America and North America and issues such as of identity, symbols, power, and social relations.

ANTH 3000 CULTURE, MARRIAGE AND THE FAMILY (3) LEC. 3. Pr., ANTH 1000. The role and meaning of kinship and its universal and particularistic features in human society.

ANTH 3100 LANGUAGE AND CULTURE (3) LEC. 3. Pr., SSCI and jr. standing. The course examines the interplay between language and culture, including socio-linguistics, discourse, mythology, and folklore.

ANTH 3107 LANGUAGE & CULTURE (3) LEC. 3.

ANTH 3200 ANTHROPOLOGY OF GENDER (3) LEC. 3. Pr., ANTH 1000. Gender relations and representations in different cultures, historical periods, and discourses.

ANTH 3300 PHYSICAL ANTHROPOLOGY (3) LEC. 3. Pr., ANTH 1000 and ANTH 2310. An overview of physical anthropology including evolutionary theory and genetics, primatology, human origins, and biological variation of contemporary human populations. Concepts will be applied during in-class laboratory exercises.

ANTH 3400 ARCHAEOLOGICAL FIELD SCHOOL (6) LEC. 6. Pr., ANTH 1000. Field methods. Archaeological surveying and excavation procedures taught at selected locations.

ANTH 3600 MEDICAL ANTHROPOLOGY (3) LEC. 3. Pr., SSCI and jr standing. How universal experiences of illness and healing are understood by people of different cultures.

ANTH 3700 POLITICAL ECOLOGY (3) LEC. 3. Pr., SSCI and jr standing. Problems in ethnoecology, cultural ecology, political ecology and environmentalism.

ANTH 3800 MESOAMERICAN ARCHAEOLOGY (3) LEC. 3. Pr., ANTH 1000., Or departmental approval and jr. standing. The prehistoric cultures of Mesoamerica, from the Olmecs to the Aztecs.

ANTH 3830 HISTORICAL ARCHAEOLOGY (3) LEC. 3. Historical archaeology and ethohistory with emphasis on the cultures of peoples who left few written records.

ANTH 3850 HISTORICAL ARCHAEOLOGY AND ETHNOHISTORY (3) LEC. 3. Pr., ANTH 1000. The diversity and complexity of prehistoric to protohistoric cultures of the southeastern United States.

ANTH 3910 ARCHAEOLOGY LABORATORY PRACTICUM (3) LEC. 1. LAB. 2. Pr., ANTH 1000 and ANTH 2100. Analysis, preservation, cataloging and restoration of archaeological materials.

ANTH 3940 ARCHAEOLOGY LABORATORY PROBLEMS (3) LEC. 1. LAB. 2. Pr., ANTH 1000 and ANTH 2100. Investigates a specific archaeological problem or problems and involves students in laboratory techniques and research.

ANTH 3960 ARCHAEOLOGY FIELD PROBLEMS (3) LEC. 1. LAB. 2. Pr., ANTH 1000 and ANTH 2100. A practical investigation of a specific field problem that involves excavation techniques, mapping and data recording.

ANTH 4300 THE ANTHROPOLOGY OF LAW (3) LEC. 3. Pr., ANTH 1000. An introduction to the study of law in cultures and societies around the world. Jr. standing.

ANTH 4310 ANTHROPOLOGICAL THEORY (3) LEC. 3. Pr., ANTH 1000. Major thinkers in cultural anthropology and their theoretical models considered in historical perspective.

ANTH 4600 FOOD, CULTURE, AND NUTRITION (3) LEC. 3. Pr., ANTH 1000. An exploration into human food choices and nutrition past present, this course fosters critical thinking on issues of identity, economics, and ecology in human consumption.

ANTH 4920 INTERNSHIP IN ANTHROPOLOGY (3) AAB/INT. 3. Pr., ANTH 1000. An internship with a federal/state agency for practical work or research on anthropological problems.

ANTH 4960 SPECIAL PROBLEMS (3) LEC. 3. Pr., ANTH 1000. An independent reading program to pursue specific interests in anthropology not covered in other courses.

ANTH 4967 HONORS SPECIAL PROBLEMS (1-3) IND. 3. Pr., Honors College. ANTH 1000. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

ANTH 4997 HONORS THESIS (1-3) IND. Pr., Honors College. ANTH 1000. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

ANTH 5100 NORTH AMERICAN INDIANS (3) LEC. 3. Pr., ANTH 1000. A comparative anthropological, cultural, and ethnohistorical overview of Native Americans. Jr. Standing.

ANTH 5200 GENDER DEVELOPMENT AND CULTURE (3) LEC. 3. Pr., ANTH 1000. The role of gender and culture in Third World development from an anthropological perspective. Jr. Standing.

ANTH 5600 CULTURE MEDICINE AND POWER (3) LEC. 3. Pr., ANTH 1000. Power in the context of illness and healing at local, national, and international levels. Jr. Standing.

ANTH 5700 CRITIQUE OF DEVELOPMENT (3) LEC. 3. Pr., ANTH 3700. The meanings and structures of national and international development.

ANTH 5930 DIRECTED STUDIES (1-3) IND. Pr., ANTH 1000.A directed study course in anthropology that allows students to explore concepts not covered in other courses. Course may be repeated for a maximum of 6 credit hours.

ANTH 5970 SPECIAL TOPICS IN ANTHROPOLOGY (3) LEC. 3. Pr., ANTH 1000.Examination of a specific problem in ethnographic methods, theory, and cultural analysis.

ANTH 6100 NORTH AMERICAN INDIANS (3) LEC. 3. An advanced comparative cultural and ethnohistorical overview of the Native American cultures of North America, emphasizing change and contact situations.

ANTH 6200 GENDER DEVELOPMENT AND CULTURE (3) LEC. 3. The role of gender and culture in Third World economic development from an anthropological perspective.

ANTH 6600 CULTURE MEDICINE AND POWER (3) LEC. 3. Power in the context of illness and healing at local, national, and international levels.

ANTH 6700 CRITIQUE OF DEVELOPMENT (3) LEC. 3. The meanings and structures of national and international development in historical perspective to include cultural values, power, inequality, and resistance.

ANTH 6930 DIRECTED STUDY (1-3) IND. A directed study course in anthropology that allows students to explore concepts not covered in other courses. Course may be repeated for a maximum of 6 credit hours.

ANTH 6970 SPECIAL TOPICS IN ANTHROPOLOGY (3) LEC. 3. Pr., ANTH 1000.Examination of a specific problem in ethnographic methods, theory, and cultural analysis.

Architecture - ARCH

Courses

ARCH 1000 CAREERS IN DESIGN AND CONSTRUCTION (1) LEC. 1, LST. 1. SU. Introduction to the environmental design and construction professions and the curricula in the chosen field.

ARCH 1010 INTRODUCTION TO ARCHITECTURE DESIGN (5) LEC. 1, LST. 12. SU. Principles of visual organization, research and design process skills, and the graphic communication of form and ideas.

ARCH 1020 INTRODUCTION TO ARCHITECTURE DESIGN II (5) LEC. 1, LST. 12. Pr., ARCH 1010 and ARCH 1000 and ARCH 1060.Principles of visual organization, research and design process skills, and the graphic communication of form and ideas.

ARCH 1060 VISUAL COMMUNICATION (2) LEC. 1, LEC/STU. 2. SU. Introduction to graphic communication. Focus on developing graphic skills for the purpose of explaining form and communicating ideas via exercises in drafting, sketching, and diagramming.

ARCH 1420 INTRODUCTION TO DIGITAL MEDIA (2) LEC. 1, LST. 2. Pr., ARCH 1060.Introduction to the principles of 2-D and 3-D digital media and how these principles are utilized in architectural design.

ARCH 2010 STUDIO I (6) LEC. 2, LST. 10. Pr., ARCH 1020 and ARCH 1420.Basic issues of architectural design centered around the thoughtful creation of exterior and interior space. Studies of light, material, texture, proportion, scale, and site are integrated into each project.

ARCH 2020 STUDIO II (6) LEC. 2, LST. 10. Pr., ARCH 2010.Fundamental design process skills including observation, analysis, and synthesis.

ARCH 2110 HISTORY OF WORLD ARCHITECTURE I (3) LEC. 3. Pr., ARCH 1020.Examination of the social determinants that shape the public beliefs and practices that produce buildings.

ARCH 2117 HONORS ARCHITECTURAL HISTORY I: HISTORY OF THE BUILT ENVIRONMENT (3) LEC. 3. Pr., Honors College. ARCH 1010.Examination of the social determinants that shape the public beliefs and practices that produce buildings.

ARCH 2210 ENVIRONMENTAL CONTROLS I (3) LEC. 3. Pr., ARCH 1020.This course provides the basic knowledge and skills requisite an architect in the design of environmentally responsive buildings.

ARCH 2220 ENVIRONMENTAL CONTROLS II (2) LEC. 2. Pr., ARCH 1020.This course provides the basic knowledge and skills requisite an architect in the design of environmentally responsive buildings.

ARCH 2600 THE ART OF ARCHITECTURE, PLACE, AND CULTURE (3) LEC. 3. The interrelationship of art, architecture, place, and culture with emphasis on the art of architecture from a global multicultural perspective. Illustrated lecture, readings, and essays.

ARCH 3010 STUDIO III (6) LEC. 2, LST. 10. Pr., ARCH 2020 and ARCH 3110. Builds on ARCH 2010 and 2020. The process of making architecture through critical inquiry and investigation. The physical, social, ethical contexts that inform the design of every building.

ARCH 3020 STUDIO IV (6) LEC. 2, AAB/LST. 10. Pr., ARCH 3010 or ARIA 3020. Builds on ARCH 3010 and adds an emphasis on the integration of construction tectonics in the development of architectural form.

ARCH 3110 HISTORY OF WORLD ARCHITECTURE II (3) LEC. 3. Pr., ARCH 2110. Introduction to key European buildings and towns from the Bronze Age to the Enlightenment. Examines how societal beliefs and practices influence the making of architecture.

ARCH 3120 HISTORY OF MODERN ARCHITECTURE (3) LEC. 3. Pr., ARCH 3110. The history of architecture, 1850-present, with an emphasis on the rise of the modern movement in Europe and the U.S.

ARCH 3320 MATERIALS AND METHODS OF CONSTRUCTION I (3) LEC. 3. Pr., ARCH 1020. The properties and potential design function of materials used in contemporary construction, with an emphasis on foundation systems, wood, and masonry.

ARCH 3410 DESSEIN ELECTIVES (3) LEC. 3. Explorations in the art of representation. Complete descriptions of specific courses and their prerequisites are available from the School of Architecture. Planning and Landscape Architecture Course may be repeated for a maximum of 6 credit hours.

ARCH 3500 SEMINAR IN METHODS AND PROCESSES (3) LEC. 3. Pr., ARCH 2020. The tools and techniques available to the design professional including specific design specializations, and design methodologies. Descriptions of specific seminars are available from the School of Architecture. Course may be repeated with change in topics.

ARCH 3600 SEMINAR IN CONTEMPORARY ISSUES (3) LEC. 3. Pr., ARCH 2020. Investigation of significant topics that present opportunities and constraints to architectural thought and practice. Course may be repeated with change in topics.

ARCH 3700 SEMINAR IN HISTORY AND THEORY (3) LEC. 3. Pr., ARCH 2010. Investigation of theories, schools or periods to examine the potential and limitations of architecture. Descriptions of specific seminars available from School of Architecture. Course may be repeated with change in topics.

ARCH 3710 SEMINAR IN HISTORICAL PERSPECTIVES (3) LEC. 3.

ARCH 3800 SEMINAR IN ASPECTS OF DESIGN (3) LEC. 3. Pr., ARCH 2020. Study of aspects of architectural design, such as form, space, style, meaning, perception, culture. Descriptions of specific seminars available from the School of Architecture. Course may be repeated with change in topics.

ARCH 4010 STUDIO V (6) LEC. 2, LST. 10. Pr., ARCH 3010 or ARIA 3020 and BSCI 3400. The comprehensive design of buildings, building complexes, and spaces in an urban context. Lectures emphasize urban issues, research methods. Programming and analysis will parallel studio projects of increasing complexity.

ARCH 4020 STUDIO VI (6) LEC. 2, AAB/LST. 10. Pr., ARCH 4010 or ARIA 4020 and BSCI 3450. The design of buildings, building complexes, and spaces with emphasis on the integration of building systems and tectonic development.

ARCH 4110 HISTORY OF URBAN ARCHITECTURE (3) LEC. 3. Pr., ARCH 2110 and ARCH 3110. The course surveys the history of the physical and formal manifestations of the urban environment from its inception to our days.

ARCH 4320 MATERIALS AND METHODS OF CONSTRUCTION II (3) LEC. 3. Pr., ARCH 3320. Properties and potential design applications of materials used in contemporary construction, with an emphasis on steel and concrete, roofing, glass and glazing, cladding, and interior finishes.

ARCH 4500 PROFESSIONAL PRACTICE (3) LEC. 3. Pr., ARCH 3020 or ARIA 3020. Architects' legal responsibilities, frameworks of professional practice, office organization, business planning, marketing, project delivery, internship and professional ethics and leadership.

ARCH 4900 DIRECTED STUDIES (1-6) AAB. Development of an area of special interest through independent study. Evaluation of the work may be by faculty jury. School approval. Course may be repeated for a maximum of 6 credit hours.

ARCH 4910 RURAL STUDIO COMPLETION (0) LEC. Completion of construction project for ARCH 4120 Elective Studio. This studio is based in the School's remote facilities in Newbern, AL.

ARCH 4960 SPECIAL PROBLEMS (1-6) LEC. 4900 Course may be repeated for a maximum of 6 credit hours.

ARCH 4997 HONORS THESIS (1-6) LEC. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ARCH 5010 STUDIO VII (6) LEC. 2, AAB/LST. 10. Pr., ARCH 4020 or ARIA 4020. Advanced problem-solving in the synthesis of previous design experiences. Development of a comprehensive design project.

ARCH 5020 THESIS STUDIO (7) LEC. 3, AAB/LST. 10. Pr., ARCH 5010 and ARCH 5990. Exploration and development of an architectural project under the direction of a faculty member.

ARCH 5100 TEACHING METHODS (1) LEC. 1.

ARCH 5240 BEING THERE (1) LEC. 1.

ARCH 5340 METHODS IN COMMUNITY BASED LEARNING (3) LEC. 3.

ARCH 5990 INTRODUCTION TO THESIS RESEARCH (2) LEC. 2. The tools, techniques, and strategies required to select, develop, refine, write, and present a thesis argument.

ARCH 5991 THESIS RESEARCH (1) LEC. 1. Pr., ARCH 5990. Expansion on the individual thesis argument and research begun in ARCH 5990 in parallel with the development of their thesis design project in ARCH 5020.

Art - ARTS

Courses

ARTS 1010 BASIC DRAWING (3) AAB/STU. 6. Instruction in freehand drawing concepts, materials and techniques. A variety of approaches and subject matter will be used. Not open to ARTF, ARTH, and ATLA majors.

ARTS 1030 BASIC CERAMICS (3) STU. 6. Instruction in principles of three-dimensional design and sculpture. Clay is used to explore techniques of casting, constructing, modeling, and wheel throwing. Work with glazes and surface decoration. Not open to ARTF, ARTH, and ATLA majors.

ARTS 1040 BASIC PAINTING (3) STU. 6. Instruction in painting concepts, materials, and techniques. Water-based paints and other media are used to explore a variety of approaches and subject matter. Not open to ARTF, ARTH, and ATLA majors.

ARTS 1110 DRAWING I (3) AAB/STU. 6. Basic drawing with emphasis on accurate observation, pictorial organization, and the depiction of space; development of drawing skills using various black and white media.

ARTS 1120 DRAWING II (3) STU. 6. Pr., ARTS 1110. Continuation of concepts and processes from ARTS 1110. Introduction to interpretive approaches with emphasis on concept, content, and creativity. Exploration of various black and white and color media.

ARTS 1210 2-D DESIGN FOR STUDIO ART (3) STU. 6. Elements and principles of basic two-dimensional design. Emphasis on composition, color theory, and craftsmanship.

ARTS 1220 3-D DESIGN FOR STUDIO ART (3) STU. 6. Elements and principles of basic three-dimensional design. Emphasis on spatial organization, color, and media exploration and craftsmanship.

ARTS 1510 LOOKING AT ART: APPROACHES TO INTERPRETATION (3) LEC. 3. Introduces the fundamental structures of the art world, and multiple approaches to looking at and responding to art.

ARTS 1710 INTRODUCTION TO ART HISTORY I (3) LEC. 3. Fine Arts Core. Introduction to major art traditions of the world, from Paleolithic times to AD/CE 1000.

ARTS 1717 HONORS INTRODUCTION INTO ART HISTORY I (3) LEC. 3. Pr., Honors College. Fine Arts Core. Introduction to major art traditions of the world, from Paleolithic times to AD/CE 1000. Credit will not be given for both ARTS 1710 and ARTS 1717.

ARTS 1720 INTRODUCTION TO ART HISTORY II (3) LEC. 3. Fine Arts Core. An introduction to world art, c.1000 to c.1700. Medieval, Renaissance, and Baroque Europe with Islamic and non-Western art of the same time period.

ARTS 1727 HONORS INTRO ART HISTORY II (3) LEC. 3. Pr., Honors College.Fine Arts Core. An introduction to world art, c. 1000 to c. 1700. Medieval, Renaissance, and Baroque Europe with Islamic and non-Western art of the same period. Credit will not be given for both ARTS 1720 and ARTS 1727.

ARTS 1730 INTRODUCTION TO ART HISTORY III (3) LEC. 3. Fine Arts Core. Major works of painting, sculpture, and architecture from the Rococo period through the 20th century. Emphasis on styles and social, political and cultural relationships.

ARTS 1737 HONORS INTRODUCTION TO ART HISTORY III (3) LEC. 3. Pr., Honors College.Fine Arts Core. Major works of painting, sculpture, and architecture from the Rococo period through the 20th century. Emphasis on styles and social, political and cultural relationships. Credit will not be given for both ARTS 1730 and ARTS 1737.

ARTS 2110 FIGURE DRAWING (3) AAB/STU. 6. Pr., ARTS 1710 or ARTS 1720 or ARTS 1730 or ARTS 1120., or Departmental approval. The human figure as form and as compositional element. Measuring and sighting for proportion. Drawing from casts, skeletons, and nude models.

ARTS 2140 ADVANCED DRAWING I (3) AAB/STU. 6. Pr., ARTS 1710 or ARTS 1720 or ARTS 1730 or ARTS 1120.Concepts, materials and techniques with emphasis on the development of a personal vision and individual approach. Nude models may be used.

ARTS 2210 INTRODUCTION TO PHOTOGRAPHY (3) AAB/STU. 6. Pr., (ARTS 1710 or ARTS 1720 or ARTS 1730) and ARTS 1120 and ARTS 1210., or Departmental approval.Fine art photographic concepts and techniques including camera operation, tonal control of B/W prints, presentations of historical and contemporary photography.

ARTS 2310 PAINTING I (3) AAB/STU. 6. Pr., (ARTS 1710 or ARTS 1720 or ARTS 1730) and ARTS 1120 and ARTS 1210., or Departmental approval. Instruction in painting concepts, materials, and methods.

ARTS 2410 PRINTMAKING: RELIEF (3) STU. 6. Pr., (ARTS 1710 or ARTS 1720 or ARTS 1730) and ARTS 1120 and ARTS 1210., or Departmental approval. Instruction to relief printmaking. Studio work supplemented with lectures, critiques, and readings.

ARTS 2510 INTRODUCTION TO SCULPTURE (3) AAB/STU. 6. Pr., (ARTS 1710 or ARTS 1720 or ARTS 1730) and ARTS 1120 and ARTS 1220., or Departmental approval. of the materials, processes; and issues involved in the production of contemporary object-oriented sculpture. Focus on problem solving and presentations of contemporary sculpture.

ARTS 2610 INTRODUCTION TO DIGITAL ART (3) STU. 6. Pr., (ARTS 1710 or ARTS 1720 or ARTS 1730) and ARTS 1120 and ARTS 1210., or Departmental approval. ARTS majors only. An introduction to the skills and concepts of digital art forms such as imaging, time, and sound using computer-based tools and techniques.

ARTS 2810 CERAMICS I (3) AAB/STU. 9. Pr., (ARTS 1710 or ARTS 1720 or ARTS 1730) and ARTS 1120 and ARTS 1220., or Departmental approval. Introduction to handforming methods for sculpture and vessel forms in clay. Work with glazes and firing.

ARTS 2970 SPECIAL TOPICS IN STUDIO ART AND ART HISTORY (3) LEC. 3. Topics in Studio Art and Art History. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

ARTS 3010 ELEMENTARY SCHOOL ART (4) LEC. 2, LEC/STU. 4. A practical and hands-on introduction to teaching art, and the materials and methods related to elementary and pre-school art. Open to ARTS majors as a non art elective.

ARTS 3100 INTERMEDIA (3) STU. 6. Pr., ARTS 2510 and (ARTS 2810 or ARTS 3820) and (ARTS 2210 and ARTS 2310 and ARTS 2410) and ARTS 1710 and ARTS 1720.Introduction to concepts and visual problem solving in mixed media.

ARTS 3150 ADVANCED DRAWING II (3) STU. 6. Pr., ARTS 2140 and (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730).Medium and subject determined by student with approval of instructor. Emphasis on strengthening the student's aesthetic awareness and technical skills.

ARTS 3220 DIGITAL AND COLOR PHOTOGRAPHY (3) AAB/STU. 6. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730) and ARTS 2310 or GDES 3210., or Departmental approval. Concepts and practices of contemporary art photography Concepts and practices of contemporary art photography including digital production techniques and color photographic theory.

ARTS 3230 INTERMEDIATE PHOTOGRAPHY (3) STU. 6. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730) and ARTS 2210 or GDES 3210., or Departmental approval. Intermediate study of photographic processes Emphasis on technique, classroom craftsmanship, medium and large camera formats, approaches to content and researching concepts to inform studio production.

ARTS 3320 PAINTING II (3) AAB/STU. 6. Pr., ARTS 1110 and ARTS 1120 and ARTS 1210 and (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730) and ARTS 2310., or Departmental approval. Instruction in painting concepts, materials, and techniques with emphasis on the development of technical skills and a personal vision and individual approach.

ARTS 3330 PAINTING III (3) AAB/STU. 6. Pr., ARTS 2140 and ARTS 3320., or Departmental approval. Medium and subject determined by student and instructor. Emphasis on strengthening aesthetic awareness and technical skills. Nude models may be used.

ARTS 3420 PRINTMAKING: INTAGLIO (3) STU. 6. Pr., (ARTS 1120 and ARTS 1210 and ARTS 1710 and ARTS 1720) or (ARTS 1720 and ARTS 1730) or (ARTS 1710 and ARTS 1730)., or Departmental approval. Introduction to intaglio printmaking. Studio work with lectures, critiques, and reading.

ARTS 3430 PRINTMAKING: SERIGRAPHY (3) STU. 6. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730) and ARTS 2410 or ARTS 3420., or Departmental approval. Introduction to water based screen-printing. Studio work supplemented with lectures, critiques, and reading. Departmental approval.

ARTS 3520 SCULPTURE AS OBJECT (3) STU. 6. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730) and ARTS 2510., or Departmental approval. Continued research into the materials, processes and issues involved in the production of mixed media sculpture. Readings and discussions on recent developments in the field of sculpture.

ARTS 3530 SCULPTURE AS SPACE (3) STU. 6. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730) and ARTS 2510., or Departmental approval. A survey of the methods, technologies (including sound and light), and issues involved in the production of contemporary sculptural installations, environments, and sites. Class discussion of student projects, with readings, presentations, and videos that address current art practice.

ARTS 3650 HISTORY OF PHOTOGRAPHY (3) LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). Introduction to history of photography with emphasis on American documentary photography.

ARTS 3680 TWENTIETH-CENTURY ART II: 1945-2000 (3) LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730)., or Departmental approval. An introduction to the artists, movements, institutions, concepts, and themes of late twentieth-century art.

ARTS 3690 ARTS OF AFRICA (3) LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730)., or Departmental approval. An introduction to the art, artists, themes and issues in African art from the pre-colonial period to the contemporary era.

ARTS 3700 ART OF THE UNITED STATES (3) LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730)., or Departmental approval. A study of architecture, painting, and sculpture from colonial to recent times. Selected movements and works are considered in relationship both to European and to indigenous conditions and attitudes.

ARTS 3710 ANCIENT ART OF THE WEST (3) LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730)., or Departmental approval. An examination of major art traditions of the ancient world: Egypt, Near East, Aegean, Greece, Rome.

ARTS 3720 MEDIEVAL ART OF THE WEST (3) LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730)., or Departmental approval. A study of major art traditions of the West from the fall of Rome to CE 1400, with a selective focus on the major art traditions: Migration period, Carolingian, Ottonian, Romanesque, Gothic, and Italo-Byzantine.

ARTS 3730 RENAISSANCE ART IN ITALY (3) LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730)., or Departmental approval. A study of the architecture, painting, and sculpture of the 15th and 16th centuries in Italy.

ARTS 3740 BAROQUE AND ROCOCO ART (3) LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1730 and ARTS 1720)., or Departmental approval. A study of Baroque architecture, painting, and sculpture in 17th-century Europe and of the Rococo style of the 18th century.

ARTS 3750 19TH CENTURY ART (3) LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730)., or Departmental approval. An introduction to major art movements from Neo-Classicism to Post-Impressionism and Art Nouveau.

ARTS 3760 20TH CENTURY ART (3) LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730)., or Departmental approval. A study of major developments in painting, sculpture, and architecture in Europe and the United States from 1900 to recent times.

ARTS 3770 ANCIENT AMERICAN ART (3) LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730)., or Departmental approval. A study of major art traditions of Nuclear America, from Mexico to the Andes, from the beginnings to CE 1550.

ARTS 3780 RENAISSANCE ART OF NORTHERN EUROPE (3) LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730)., or Departmental approval. A study of the art of Northern Europe, CE 1300-1600. Major themes include cultural interchange, court and bourgeois patronage, rise of graphic arts, and the development of the art market.

ARTS 3790 ARTS OF ASIA (3) LEC. 3. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730)., or Departmental approval. Introduction to major art traditions of Asia, from the beginnings to the present.

ARTS 3800 ISSUES AND CRITICISM CONTEMPORARY ART (3) LEC. 3. Pr., ARTS 1710 and ARTS 1720 and ARTS 1730. and one 3000-level art history class or Departmental approval. Readings and discussions about art since 1970.

ARTS 3810 GENDER AND THE VISUAL ARTS (3) LEC. 3. Pr., ARTS 1720 and ARTS 1730., Or departmental approval. An introduction to gender issues in the visual arts in historical and contemporary contexts. Examines the cultural notions of both masculine and feminine gender roles at play in works of art and explores key issues that have affected women's production of works of art in the past and present.

ARTS 3820 CERAMICS II (3) STU. 6. Pr., ARTS 1120 and ARTS 1220 and (ARTS 1710 or ARTS 1720 or ARTS 1730)., or Departmental approval. Introduction to wheel-thrown pottery. Presentation of historical and contemporary contexts for fine arts ceramics. Work with glazes and firing.

ARTS 3830 CERAMICS III (3) STU. 6. Pr., (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730) and ARTS 2810 or ARTS 3820., or Departmental approval. Individual approaches to ceramic sculpture and vessel forms, with emphasis on stylistic and conceptual concerns.

ARTS 3920 INTERNSHIP IN STUDIO ART/ART HISTORY (3) PRA. 15. SU. Pr., At most 2 courses in ARTS 3010-3920. Junior standing; 3.0 GPA in major; and Completion of at least two 3000-level courses in major curriculum. Internships appropriate to the major with a departmental-approved sponsor providing hands-on, practical learning experiences in a professional setting.

ARTS 4010 ART IN EDUCATION (4) STU. 6. Principles and objectives of art pertinent to teaching on the public school level. Art appreciation and production emphasizing multicultural and interdisciplinary aspects of art in the classroom. Open to ARTS majors as a non art elective. Course may be repeated for a maximum of 8 credit hours.

ARTS 4240 ADVANCED PHOTOGRAPHY (4) STU. 8. Pr., ARTS 3220 and ARTS 3230 and ARTS 1710 and ARTS 1720 and ARTS 1730., or Departmental approval and one 3000-level art history course. Advanced investigations of theory, history, and methods to inform photographic practice. Emphasis on production of mature work and individual artistic identity. Regular individual and group critiques. Course may be repeated for a maximum of 8 credit hours.

ARTS 4340 PAINTING IV (4) STU. 6. Pr., ARTS 3330 and ARTS 1710 and ARTS 1720 and ARTS 1730., or departmental approval and one 3000-level art history course. Advanced painting with medium and subject idea determined by student with approval of the instructor. Emphasis on strengthening the student's awareness and technical skills as a maturing painter. Nude models may be used. Course may be repeated for a maximum of 8 credit hours.

ARTS 4440 ADVANCED PRINTMAKING (4) STU. 6. Pr., ARTS 2410 and ARTS 3420 and ARTS 3430 and ARTS 1710 and ARTS 1720 and ARTS 1730., or Departmental approval and one 3000-level art history course. Individual research in printmaking. Students focus on conceptual and technical development through continued research in relief, intaglio, or screen-printing. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

ARTS 4540 ADVANCED SCULPTURE (4) STU. 6. Pr., ARTS 3520 and ARTS 3530 and ARTS 1710 and ARTS 1720 and ARTS 1730., or Departmental approval and one 3000-level art history course. Advanced investigation of the history, theory and methods of sculptural practice. Individual instruction and supervision of research and reading. Regular individual and group critiques. Course may be repeated for a maximum of 8 credit hours.

ARTS 4700 SENIOR CAPSTONE: ART HISTORY (3) LEC. 3. Capstone course for Art History. Declared Art History option major or minor; and completion of 18 hours of 3000 level Art History courses.

ARTS 4840 CERAMICS IV (4) STU. 6. Pr., ARTS 1710 and ARTS 1720 and ARTS 1730 and ARTS 3820 and ARTS 3810., or Departmental approval and one 3000-level art history course. Continuation of ARTS 3830 with increased emphasis on individual stylistic and conceptual concerns.

ARTS 4850 PROFESSIONAL STUDIO PRACTICES (2) LEC. 2. Instruction in portfolio preparation, resume writing, gallery and museum exhibition, and information on a wide range of art careers and graduate study.

ARTS 4930 DIRECTED STUDIES (2-3) IND. Open to ARTS students only, who have shown ability, initiative, and industry. Departmental approval and 3.0 minimum GPA in 3000-level ARTS courses in area of concentration. Course may be repeated for a maximum of 6 credit hours.

ARTS 4967 HONORS SPECIAL PROBLEMS (1-3) LEC. Pr., Honors College. Course may be repeated for a maximum of 3 credit hours.

ARTS 4970 SPECIAL TOPICS IN STUDIO ART AND ART HISTORY (2-3) STU. Topics in Studio Art and Art History. Focus will vary according to the instructor. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ARTS 4980 SENIOR PROJECT FOR STUDIO ARTS (4) STU. 8. Pr., ARTS 2510 and ARTS 2810 or ARTS 3820 and two of the following (ARTS 2210, ARTS 2310, and ARTS 2410, and 3 additional courses in a single Fine Arts studio concentration. Studio Arts sequence in one group through level IV. Must be taken in student's final semester. A directed terminal studio project with choice of subject and medium. This project will be exhibited and a faculty committee will award a letter grade. Professional quality color images of the project work must be presented to the department before student is cleared for graduation.

ARTS 4997 HONORS RESEARCH AND THESIS (1-3) IND. Pr., Honors College. Course may be repeated for a maximum of 6 credit hours.

Aviation Management - AVMG

Courses

AVMG 1010 INTRODUCTION TO AVIATION (2) LEC. 2. Orientation to aviation management career opportunities. The history of significant events and accomplishments in the attempt to move through the air and space.

AVMG 3050 SEVERE AND HAZARDOUS WEATHER DISRUPTIONS (3) LEC. 3. Or departmental approval. Meteorology as it applies to the operation of aircraft with emphasis on observation of weather elements and interpretation of flight planning weather information.

AVMG 3140 PERFORMANCE EVALUATION AND MEASUREMENT (3) LEC. 3. Pr., AVMG 1010 and SCMN 3150 and SCMN 3720. Introduction to the use of operations research techniques. Includes the role of math modeling procedures, manual and computer generated solutions, applied to the decision-making process. Credit will not be given for both AVMG 3140 and SCMN 4700.

AVMG 3200 APPLIED ANALYSIS IN TRANSPORTATION (3) LEC. 3. Pr., AVMG 1010 and SCMN 3150 and SCMN 3720., Or departmental approval. Development of principles required in economic analysis.

AVMG 4040 BUSINESS AVIATION MANAGEMENT (2) LEC. 2. Pr., AVMG 1010 and SCMN 3720., Or departmental approval. Current principles and practices in commercial and business/corporate flight operations including organizational sources of revenue, functions, operation and typical problems.

AVMG 4060 TRANSPORTATION SAFETY MANAGEMENT (3) LEC. 3. Pr., AVMG 1010 and SCMN 3720. Analysis and insight into the sequence of circumstances that can occur and cause an aircraft accident to happen as well as the techniques, processes and limitations in determining aircraft accident causation.

AVMG 4080 AIR TRANSPORT PLANNING (3) LEC. 3. Pr., AVMG 5090. Management decision making involved in selection of equipment, routes and the establishment of rates by certified and non-certified air carriers.

AVMG 4130 AIRPORT MANAGEMENT (3) LEC. 3. Pr., MKTG 3310. Practices in management of a civil public airport, including organization, functions, operations, sources of revenue, funding, maintenance and administration.

AVMG 4140 AIRPORT PLANNING AND DESIGN (3) LEC. 3. Pr., AVMG 4130. Principles and procedures pertaining to planning airport facilities required to meet the immediate and future air transportation of a community or region.

AVMG 4190 AIR SPACE MANAGEMENT (3) LEC. 3. Pr., AVMG 1010 or AVMG 3050., Or departmental approval. Air traffic control procedures, facilities, center, and operations. Theory of radar operation and air traffic separation using computer-based ATC radar simulators. Special fee.

AVMG 4200 AIR CARGO OPERATIONS (3) LEC. 3. Domestic and international air cargo operations with emphasis on cargo economics, equipment, domestic and international regulatory activities, agents, operational techniques, systems and problems.

AVMG 4810 PROFESSIONAL DEVELOPMENT IN AVIATION (1) LEC. 1. SU. This course examines various aviation profession issues and strategies. This course includes career planning, professional development and certifications, educational initiatives for continued professional development, and career management strategies. Credit will not be given for both SCMN 4810 and AVMG 4810.

AVMG 4920 INTERNSHIP IN AVIATION MNGT (1-6) INT. Practical on-the-job training under supervision with aviation agencies. Written reports are required by designated faculty supervisors. Course may be repeated for a maximum of 6 credit hours.

AVMG 4967 HONORS SPECIAL PROBLEMS (1-3) LEC. Pr., Honors College.2.2 cumulative GPA or College of Business Academic Excellence Initiative requirements.

AVMG 4997 HONORS THESIS (1-3) IND. Pr., Honors College.

AVMG 5090 AVIATION LAW AND POLICY (3) LEC. 3. Pr., AVMG 1010 and AVMG 3050 and SCMN 3720., Or departmental approval. The legal structure of aviation including federal, local and state statutes, contracts, insurance and liability, regulatory statutes and case law.

AVMG 5170 AIRLINE MANAGEMENT (3) LEC. 3. Pr., AVMG 1010 and AVMG 3050 and SCMN 3150 and SCMN 3720., Or departmental approval. Airline manufacturing, economic, and operational/managerial issues, research and development and competition issues and a survey of the world's major airlines in terms of their management strategies and style.

AVMG 5180 GLOBAL AIR TRANSPORTATION MANAGEMENT (3) LEC. 3. Pr., AVMG 3140 and AVMG 3200., Or departmental approval. International foreign air carriers, influences of ICAO and IATA, national ownership, determinants of power, operational and management practices, routes and fares.

AVMG 5970 SPECIAL TOPICS AVIATION MNGT (1-4) LEC. Investigation of current issues in the aviation industry. Course may be repeated for a maximum of 4 credit hours.

AVMG 6090/6096 AVIATION LAW AND POLICY (3) LEC. 3. The legal structure of aviation including federal, local, and state statutes, contracts, insurance and liability, regulatory statutes and case law. Departmental approval.

AVMG 6170/6176 AIRLINE MANAGEMENT (3) LEC. 3. Airline manufacturing, economic, and operation/managerial issues, research and development and competition issues and a survey of the world's major airlines in terms of their management strategies and style. Departmental approval.

AVMG 6180/6186 GLOBAL AIR TRANSPORTATION MANAGEMENT (3) LEC. 3. Pr., AVMG 3140 and AVMG 3200. International foreign air carriers, influences of ICAO and IATA, national ownership, determinants of power, operational and management practices, routes and fares/ Junior standing or departmental approval.

AVMG 6970/6976 SPECIAL TOPICS AVIATION MNGT (1-3) LEC. 1-3. Investigation of current issues in the aviation industry. Credit will not be given for both AVMG 5970 and AVMG 6970. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

AVMG 7930/7936 SPECIAL PROBS IN AVIATION MNGT (1-3) LEC. 1-3. Special problems and current status of the aviation and aerospace industries are analyzed through a problem solving exercise. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

Biochemistry - BCHE

Courses

BCHE 3180 NUTRITIONAL BIOCHEMISTRY (3) LEC. 3. Pr., CHEM 2030 or CHEM 2080. Fundamental pathways of carbohydrate, lipid, and amino acid metabolism in human beings. Credit will not be given for both BCHE 3180 and BCHE 3200. Departmental approval.

BCHE 3200 PRINCIPLES OF BIOCHEMISTRY (3) LEC. 3. Pr., (BIOL 1010 or BIOL 1020 or BIOL 1030 or BIOL 1027 or BIOL 1037) and (CHEM 2030 or CHEM 2070 or CHEM 2080). Structure and function of biomolecules, enzyme catalysis, processing of genetic information, bioenergetics and metabolism, and regulatory mechanisms in cellular processes.

BCHE 3201 PRINCIPLES OF BIOCHEMISTRY LABORATORY (1) LAB. 2. Coreq., BCHE 3200. Fundamental theory and techniques used in the isolation, characterization, and study of biomolecules.

BCHE 5180 BIOCHEMISTRY I (3) LEC. 3. Pr., CHEM 2080. Fundamentals of metabolism, focusing on the design and regulation of the major catabolic and biosynthetic metabolic pathways. Bioenergetics.

BCHE 5181 BIOCHEMISTRY I LABORATORY (1) LAB. 3. Pr., P/C, BCHE 5180 or P/C, CHEM 5180. Laboratory techniques required for identification and quantification of compounds of important biochemical classes.

BCHE 5190 BIOCHEMISTRY II (3) LEC. 3. Pr., BCHE 5180. Fundamentals of metabolism, focusing on the design and regulation of the major catabolic and biosynthetic metabolic pathways.

BCHE 5191 BIOCHEMISTRY II LABORATORY (1) LAB. 3. Pr., P/C, BCHE 5190 or P/C, CHEM 5190. Laboratory techniques required for partial purification, kinetic studies, and characterization of enzymes and nucleotides from various plants, animals and bacteria.

BCHE 5250 PLANT METABOLIC PATHWAYS (3) LEC. 3. Pr., CHEM 2080. Fundamental processes of metabolism specific to plants.

BCHE 6180 BIOCHEMISTRY I (3) LEC. 3. Pr., CHEM 2080. Fundamentals of the classification, structure, and reactions of the major constituents of living matter and evaluation of binding phenomena and bioenergetics. Departmental approval.

BCHE 6181 BIOCHEMISTRY I LABORATORY (1) LAB. 3. Pr., P/C, BCHE 6180 or P/C, CHEM 6180. Laboratory techniques required for identification and quantification of compounds of important biochemical classes.

BCHE 6190 BIOCHEMISTRY II (3) LEC. 3. Pr., BCHE 6180. Fundamentals of metabolism, focusing on the design and regulation of the major catabolic and biosynthetic metabolic pathways. Departmental approval.

BCHE 6191 BIOCHEMISTRY II LABORATORY (1) LAB. 3. Pr., P/C, CHEM 6190. Laboratory techniques required for partial purification, kinetic studies, and characterization of enzymes and nucleotides from various plants, animals, and bacteria.

BCHE 6250 PLANT METABOLISM (3) LEC. 3. Pr., CHEM 2080. Fundamental processes of metabolism specific to plants.

BCHE 7200 ADVANCED BIOCHEMISTRY I (3) LEC. 3. Graduate credit will not be given for both BCHE 6190 and BCHE 7200.

BCHE 7210 ADVANCED BIOCHEMISTRY II (3) LEC. 3. Structure and function of macromolecules participating in the flow of molecular information. Graduate credit will not be given for both BCHE 6180 and BCHE 7210. Or equivalent.

BCHE 7220 PRINCIPLES OF CELLULAR AND MOLECULAR ENZYMOLOGY (3) LEC. 3. Pr., BCHE 6190 or CHEM 6190 or BCHE 7200. The principles of enzyme chemistry including the physical, chemical, and catalytic properties of enzymes. Departmental approval.

BCHE 7230 BIOCHEMISTRY OF MACROMOLECULES (3) LEC. 3. Pr., BCHE 6180 or BCHE 7200. Advanced study of the structure of protein and nucleic acids: DNA replication, RNA transcription and protein synthesis. Departmental approval.

BCHE 7250 BIOCHEMISTRY OF LIPIDS AND LIPOPROTEINS (3) LEC. 3. Pr., BCHE 7200. The regulation of lipid and lipoprotein metabolism, role of lipid mediators in signaling pathways and protein modification, assembly and dynamics of lipoproteins and biomembranes. Departmental approval.

BCHE 7260 BIOINFORMATICS (3) LEC. 3. Pr., BCHE 7210. Advanced study of main concepts and tools of genomics and proteomics. Departmental approval.

BCHE 7270 BIOCHEMICAL RESEARCH TECHNIQUES (3-6) LEC. Pr., BCHE 6190 or CHEM 6190. Modern biochemical laboratory techniques. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

BCHE 7280 TOPICS IN BIOCHEMISTRY (1-3) LEC. Pr., BCHE 7210. Directed studies in biochemistry. Departmental approval and BCHE 7210 or equivalent. Course may be repeated for a maximum of 3 credit hours.

Biology - BIOL

Courses

BIOL 1000 INTRODUCTION TO BIOLOGY (4) LEC. 3. LAB. 2. Science Core. Introduction to biological principles relevant to human society. Designed for non-science majors. Credit will not be given for both BIOL 1000 and BIOL 1020 or BIOL 1027.

BIOL 1001 INTRODUCTION TO BIOLOGY LABORATORY (0) LAB. Laboratory course for BIOL 1000.

BIOL 1010 A SURVEY OF LIFE (4) LEC. 3. LAB. 2. Pr., BIOL 1000 or BIOL 1020 or BIOL 1027 or SCMH 1010. Science Core. Emphasis on contrasting strategies employed by organisms to meet similar biological needs. Credit will not be given for both BIOL 1010 and BIOL 1030 or BIOL 1037.

BIOL 1011 A SURVEY OF LIFE LABORATORY (0) LAB. Laboratory course for BIOL 1010.

BIOL 1020 PRINCIPLES OF BIOLOGY (4) LEC. 3. LAB. 2. Science Core. Introduction to the physical, chemical, and biological principles common to all organisms. Credit will not be given for both BIOL 1020 and BIOL 1000 or BIOL 1027.

BIOL 1021 PRINCIPLES OF BIOLOGY LABORATORY (0) LAB. Coreq., BIOL 1020. Laboratory Course for BIOL 1020.

BIOL 1027 HONORS BIOLOGY (4) LEC. 3. LAB. 2. Pr., Honors College. Science Core. Introduction to the physical, chemical, and biological principles common to all organisms. Credit will not be given for both BIOL 1027 and BIOL 1000 or BIOL 1020.

BIOL 1030 ORGANISMAL BIOLOGY (4) LEC. 3. LAB. 2. Pr., BIOL 1020 or BIOL 1027. Coreq., BIOL 1031. Science Core. Principles and fundamentals of biology at the organismal level. Credit will not be given for both BIOL 1030 and BIOL 1010 or BIOL 1037.

BIOL 1031 ORGANISMAL BIOLOGY LABORATORY (0) LAB. Coreq., BIOL 1030. Laboratory Course for BIOL 1030.

BIOL 1037 HONORS ORGANISMAL BIOLOGY (4) LEC. 3. LAB. 2. Pr., Honors College. BIOL 1020 or BIOL 1027. Science Core. Principles and fundamentals of biology at the organismal level. Credit will not be given for both BIOL 1037 and BIOL 1010 or BIOL 1030.

BIOL 2000 MICROBIOLOGY AND PUBLIC HEALTH (4) LEC. 3. LAB. 1. Pr., BIOL 1000 or (BIOL 1020 or BIOL 1027). Introduction to the science of microbiology with an emphasis on the public health aspects. (Cannot be used to satisfy minor or major requirements in the biological sciences).

BIOL 2015 MARINE SCIENCE I OCEANOGRAPHY (5) LEC. 3. LAB. 4. Pr., MATH 1130. An introduction to oceanography that integrates physical, geological, chemical and biological oceanography to provide a multidisciplinary foundation in the fundamentals of marine science. Taught at Gulf Coast Research Laboratory. Departmental approval.

BIOL 2415 MARINE SCIENCE II: MARINE BIOLOGY (5) LEC. 3. LAB. 4. Pr., (BIOL 1020 or BIOL 1027) and (BIOL 1030 or BIOL 1037). An overview of biological oceanography with emphasis on organisms, habitats, and fisheries of Mississippi Sound and the Gulf of Mexico. Taught at Gulf Coast Research Laboratory. Departmental approval.

BIOL 2425 MARINE BIOLOGY (4) LEC. 4. Pr., BIOL 1030 or BIOL 1037. The invertebrates, vertebrates and marine plants as communities with emphasis on local examples. Taught only at Dauphin Island Sea Lab. Departmental approval.

BIOL 2445 COASTAL ECOLOGY FOR TEACHERS (4) LEC. 3. LAB. 2. Provides teachers with a background in basic coastal ecology. Interdisciplinary concepts involving the environment and its conservation. Taught at the Gulf Coast Research Laboratory. Basic science course required for education degree. Departmental approval.

BIOL 2500 HUMAN ANATOMY AND PHYSIOLOGY I (4) LEC. 3. LAB. 2. Pr., BIOL 1000 or (BIOL 1020 or BIOL 1027). Study of the structure and function of the human body. First half of two-part sequence with BIOL 2510, concentrating on tissues, muscle, and nervous system.

BIOL 2510 HUMAN ANATOMY AND PHYSIOLOGY II (4) LEC. 3. LAB. 2. Pr., BIOL 2500. Study of the structure and function of the human body. second half of two-part sequence with BIOL 2500, concentrating on cardiovascular, respiratory, digestive, urinary, reproductive and endocrine systems.

BIOL 3000/3003 GENETICS (4) LEC. 3. LAB. 1. Pr., (BIOL 1020 or BIOL 1027). An overview of theoretical principles of transmission, cytological, molecular, and population genetics. Problem solving will be emphasized. May count either BIOL 3000 or BIOL 3003.

BIOL 3010 COMPARATIVE ANATOMY (4) LEC. 3. LAB. 3. Pr., BIOL 1030 or BIOL 1037. Evolution and function of craniates and their organ systems.

BIOL 3020 GENOMIC BIOLOGY (4) LEC. 3. LAB. 2. Pr., BIOL 1020 or BIOL 1027. An overview of genes, genomes, and genomic and proteomic approaches and methodology. Application of principles of biology at the genomic level. Includes an introduction to bioinformatic approaches to genomic problems in a computer laboratory setting.

BIOL 3030 EVOLUTION AND SYSTEMATICS (3) LEC. 3. Pr., BIOL 1030 or BIOL 1037. An introduction to evolutionary processes, classification, of organisms and scientific nomenclature.

BIOL 3040 BIOLOGY OF MARINE SYSTEMS (3) LEC. 3. Pr., (BIOL 1020 or BIOL 1027) and (BIOL 1030 or BIOL 1037). Introduction to marine systems and biological investigations of coastal, near shore and open ocean organisms and processes.

BIOL 3060 ECOLOGY (4) LEC. 3. LAB. 3. Interactions of organisms with their environments and characteristics of populations, communities, and ecosystems. 8 hours of Biology or departmental approval.

BIOL 3075 INTRODUCTION TO OCEANOGRAPHY (4) LEC. 4. Pr., MATH 1150 and CHEM 1030 and PHYS 1500. The physics, chemistry, biology, and geology of the oceans. Taught only at Dauphin Island Sea Lab. Departmental approval.

BIOL 3100 PLANT BIOLOGY (4) LEC. 4. LAB. 1. Pr., (BIOL 1030 or BIOL 1037) and (CHEM 1010 or CHEM 1030). Introduction to the morphology, anatomy, physiology and classification of plants with laboratory.

BIOL 3120/3123 NURSING PATHOPHYSIOLOGY (3) LEC. 3. Exploration of membrane, muscle and nerve physiology, peripheral and central nervous systems; special consideration of physiological processes involved in cardiology, respiration, the urinary system, digestion, and reproduction.

BIOL 3200 GENERAL MICROBIOLOGY (4) LEC. 3. LAB. 2. Pr., CHEM 1030. Introduction to the science of microbiology, emphasizing cell structure, systematics, growth, genetics, and the role in human affairs.

BIOL 3500 PERSPECTIVES IN IMMUNOLOGY (3) LEC. 3. Pr., (P/C, BIOL 3000 or P/C, BIOL 3020) and BIOL 3200. Introduction to the cells and components of the immune response with an emphasis on host response to infection and medical immunology.

BIOL 4000 HISTOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 1030 or BIOL 1037. Morphology and classification of tissues; arrangement of tissues in organs and systems of vertebrate animals.

BIOL 4010 INVERTEBRATE BIODIVERSITY (4) LEC. 3. LAB. 3. Pr., BIOL 1030 or BIOL 1037. Survey of the phyla of invertebrates with emphasis on morphology, anatomy, ecology, evolution, and systematics.

BIOL 4020 VERTEBRATE BIODIVERSITY (4) LEC. 3. LAB. 3. Pr., BIOL 1030 or BIOL 1037. Ecology and evolution of living vertebrates of the world.

BIOL 4055 MARINE SCIENCE FOR TEACHERS (3) LEC. 3. Provides teachers an introduction to the study of marine science and incorporation of marine biology at all grade levels. Taught at Gulf Coast Research Laboratory. Departmental approval.

BIOL 4100 CELL BIOLOGY (3) LEC. 3. Pr., CHEM 2070 and BIOL 3000 and (BIOL 1030 or BIOL 1037). Evolution, organization, physiology, molecular biology of cells, membranes, cytoplasm, and organelles. Energy, transport, motility, cell division, signaling, transcription, translation.

BIOL 4101 CELL BIOLOGY LABORATORY (2) LAB. 4. Pr., P/C, BIOL 4100. Light/electron microscopy, cell structure, origins of life, centrifugation, protein/nucleic acid electrophoresis, and blotting, motility, DNA purification, chromatography, pH, fluorescence microscopy.

BIOL 4150 HUMAN GENETICS (3) LEC. 3. Pr., BIOL 3000 and BIOL 4100 and CHEM 2080. Study of the biological interaction of genes, effects of mutation and changes in gene frequency in human populations. Emphasis on molecular approach to study evolutionary changes in human gene pools.

BIOL 4200 CLINICAL MICROBIOLOGY (4) LEC. 3. LAB. 4. Pr., BIOL 3200. Isolation, cultivation, identification, classification, and pathogenesis of infectious agents with emphasis on bacteria; includes clinical materials, Eubacteria, Mycoplasmata, Rickettsiae, and Spirochaetes.

BIOL 4395 MARINE FAUNISTIC ECOLOGY (5) LEC. 2. LAB. 6. A field survey of animals associated with three habitat types and factors controlling their distribution in the northern Gulf of Mexico. Taught at Gulf Coast Research Laboratory. Departmental approval.

BIOL 4400 CLINICAL PHYSIOLOGY (3) LEC. 3. Pr., BIOL 2500. Exploration of membrane, muscle and nerve physiology, peripheral and central nervous systems; special consideration of physiological processes involved in cardiology, respiration, the urinary system, digestion, and reproduction.

BIOL 4410 VERTEBRATE DEVELOPMENT (5) LEC. 3. LAB. 4. Pr., BIOL 3000. Morphogenesis and organogenesis of frog, chick, pig, and human from a descriptive and analytical viewpoint.

BIOL 4425 MARINE FISHERIES MANAGEMENT (4) LEC. 4. Fisheries management philosophy, objectives, problems, and principles involved in management decisions. Offered at the Gulf Coast Research Laboratory. Departmental approval.

BIOL 4435 SPECIAL TOPICS IN MARINE SCIENCE (1-6) LEC. An opportunity for students to study in an area in which GCRL offers no formal course; not research oriented. Taught at Gulf Coast Research Laboratory. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

BIOL 4445 SPECIAL PROBLEMS IN MARINE SCIENCE (1-6) AAB/LEC. Individualized research-oriented experience. Taught at Gulf Coast Research Laboratory. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

BIOL 4455 MARINE INVERTEBRATE ZOOLOGY (5) LEC. 5.

BIOL 4465 PARASITES OF MARINE ANIMALS (6) LEC. 3. LAB. 6. Pr., BIOL 5110. A study of the parasites of marine estuarine animals with emphasis on morphology, taxonomy, life histories, and host-parasite relationships. Taught at Gulf Coast Research Laboratory. Departmental approval.

BIOL 4475 MARINE ICHTHYOLOGY (6) LEC. 6. Pr., At least 13 credits in BIOL 1000 or higher and BIOL 3010. Biology of the major piscine taxa in Mississippi Sound. Principles involved in classification and evolutionary relationships of these organisms. Taught at Gulf Coast Research Laboratory. 16 hours including BIOL 3010 and departmental approval.

BIOL 4485 MARINE ECOLOGY (5) LEC. 5. Pr., BIOL 1000-8990 and BIOL 4010. The relationship of marine organisms to their environment and the effects of environment on abundance and distribution on marine organisms. Offered at Gulf Coast Research Laboratory, Ocean Springs, MS. Departmental approval and 16 hours of Biological Science including BIOL 4010.

BIOL 4495 COMPARATIVE HISTOLOGY OF MARINE ORGANISMS (6) LEC. 6. Detailed study of the histological organization and its relationships to physiological changes during the life cycle of representative marine organisms. Light and electron microscopy. Taught at Gulf Coast Research Laboratory. Departmental approval.

BIOL 4515 MARINE INVERTEBRATE ZOOLOGY (4) LEC. 4. Pr., At least 10 credits in BIOL 2000-8990. The natural history, systematics, and morphology of marine invertebrates from the Gulf of Mexico; oriented toward a field and laboratory approach. Participation in extended field trips is part of the course. Taught only at Dauphin Island Sea Lab. Departmental approval.

BIOL 4525 DOLPHINS AND WHALES (2) LEC. 2. Pr., BIOL 1030 or BIOL 1037. Classification, anatomy, and ecology of the cetaceans. Taught only at Dauphin Island Sea Lab. Departmental approval.

BIOL 4535 COASTAL ZONE MANAGEMENT (2) LEC. 2. Pr., BIOL 1030 or BIOL 1037. Management of shorelines and flood plains, and current legislation. Water quality and ecosystem quality management. Taught only at Dauphin Island Sea Lab. Departmental approval.

BIOL 4545 COASTAL ORNITHOLOGY (4) LEC. 4. Pr., BIOL 4020. Coastal and pelagic birds with emphasis on ecology, taxonomy, and distribution. Taught at Dauphin Island Sea Lab. Departmental approval.

BIOL 4565 MARINE VERTEBRATE ZOOLOGY (4) LEC. 4. Pr., BIOL 1030 or BIOL 1037. Systematics, zoogeography and ecology of marine fishes, reptiles, and mammals. Taught at Dauphin Island Sea Lab. May not be substituted for BIOL 4020. Departmental approval.

BIOL 4575 MARINE ECOLOGY (4) LEC. 4.

BIOL 4920 INTERNSHIP IN BIOLOGY (1-4) INT. SU. Application of biology concepts and skills in a professional experience. 12 credit hours in 300-level or higher BIOL courses. Departmental approval. Student must be enrolled in a major offered by the Department of Biological Sciences. Course may be repeated for a maximum of 4 credit hours.

BIOL 4950 UNDERGRADUATE SEMINAR (1) LEC. 1. Oral presentation and discussion of recent scientific publications from a selected area of biological sciences. One hour is required for all majors. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

BIOL 4967 HONORS SPECIAL PROBLEMS (1-3) LEC. Pr., Honors College. Departmental approval and membership in the Honors College. Course may be repeated for a maximum of 3 credit hours.

BIOL 4970 SPECIAL TOPICS (1-4) AAB. Instruction and discussion in a selected current topic in Biological Sciences. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

BIOL 4980 UNDERGRADUATE RESEARCH (2-4) AAB/IND. Directed research in an area of specialty within the department. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

BIOL 4997 HONORS THESIS (1-3) IND. Pr., Honors College. Undergraduate research and thesis. Course may be repeated for a maximum of 3 credit hours.

BIOL 5020 DEVELOPMENTAL BIOLOGY (3) LEC. 3. Pr., BIOL 4100 and BIOL 4410. Consideration of induction, constancy of the genome, pathfinding by migrating cells, morphogenetic movements, and other developmental processes.

BIOL 5090 CONSERVATION BIOLOGY (3) LEC. 3. Pr., BIOL 3060. This course is an overview of ethical, economic and biological aspects of conservation biology at scales ranging from local to global. Credit will not be given for both BIOL 5090 and BIOL 6090.

BIOL 5110 PARASITOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 1030 or BIOL 1037 or BIOL 2500. Development, identification, host-parasite relationships, and medical significance of parasitic protozoa, helminthes, and arthropods that infect humans, domestic animals and wildlife. May count either BIOL 5110 or LABT 4050.

BIOL 5120 SYSTEMATIC BOTANY (4) LEC. 3. LAB. 3. Pr., (BIOL 1030 or BIOL 1037). Classification, nomenclature, distribution, systematics, and evolution of vascular plants.

BIOL 5130 ADVANCED PLANT PHYSIOLOGY (3) LEC. 3. Pr., BIOL 3100 and CHEM 2080. Coreq., BIOL 5131. Physiological and biochemical processes effecting plant growth and development including water relations, photosynthesis, respiration, and hormones.

BIOL 5131 ADVANCED PLANT PHYSIOLOGY LABORATORY (1) LAB. 3. Pr., BIOL 3101 and CHEM 2081 and BIOL 5130. Coreq., BIOL 5130. Laboratory exercises in plant physiology. Including water relations, metabolism and growth, and development.

BIOL 5140 PLANT ECOLOGY (4) LEC. 3. LAB. 4. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3060. Exploration of ecological interactions between plants and their environment. Field trips emphasize Southeastern habitats/plant examples. Includes 3-day weekend field trip. Departmental approval.

BIOL 5150 COMMUNITY ECOLOGY (3) LEC. 3. Pr., BIOL 3060. Dynamics of ecological communities, including niches, species interactions, succession, island biogeography, biodiversity and food webs. May count BIOL 5150 or BIOL 6150.

BIOL 5160 FIELD BIOLOGY AND ECOLOGY (3-15) LEC. 3. Intensive classroom and field studies of an area outside Alabama. 15 hours of biology. Course may be repeated for a maximum of 15 credit hours.

BIOL 5190 CELL AND MOLECULAR SIGNAL TRANSDUCTION (3) LEC. 3. Pr., BIOL 4100 and BIOL 5220. Study of cellular communication and regulation with emphasis on integration between cellular, molecular, genetic, and biochemical approaches.

BIOL 5210 MICROBIAL PHYSIOLOGY (3) LEC. 3. Pr., BIOL 3200 and CHEM 2080. General physiology of microbial cells emphasizing fermentation, respiration, photosynthesis, nitrogen fixation, cell wall synthesis, membranes, and macromolecular synthesis.

BIOL 5220 INTRODUCTORY MOLECULAR GENETICS (3) LEC. 3. Pr., BIOL 3000 and BIOL 3200. Principles of gene expression including replication, transcription, and translation; structure and regulation of genes; concepts and techniques in recombinant DNA.

BIOL 5230 VIROLOGY (3) LEC. 3. Pr., (P/C, BIOL 5220 or P/C, BIOL 6220) or (P/C, BIOL 5260 or P/C, BIOL 6260). Biology of viruses, including structure, entry, replication, assembly and release, pathogenesis, and epidemiology of viral infections. May count BIOL 5230 or BIOL 6230.

BIOL 5240 ANIMAL PHYSIOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 4100 or CHEM 2070. General overview of the function of the major systems in animals, including evolution and adaptation to specific environments.

BIOL 5250 MICROBIAL EVOLUTION AND DIVERSITY (4) LEC. 3. LAB. 2. Pr., BIOL 3000 and BIOL 3200. Introduction to microbial evolutionary history and theory, and survey of microbial diversity. Credit will not be given for both BIOL 5250 and BIOL 6250.

BIOL 5260 PROKARYOTIC MOLECULAR GENETICS (3) LEC. 3. Pr., BIOL 3000 and BIOL 3200. Molecular principles of bacterial genetics including gene structure, genetic organization, regulation of gene expression, acquisition and loss of genes leading to microbial evolution. Credit will not be given for both BIOL 5260 and BIOL 6260.

BIOL 5270 HOST-MICROBE INTERACTIONS (3) LEC. 3. Pr., BIOL 3200 and (BIOL 5220 or BIOL 5260). This course will explore interactions between microbes and their hosts including plants, insects and animals. Credit will not be given for both BIOL 5270 and 6270.

BIOL 5280 GENETHICS (3) LEC. 3. Pr., BIOL 3000. Twenty-first century biotechnology and related ethical issues, including human cloning, stem cells, neuroenhancement, age retardation, genetic enhancement, and nanobiology. May count BIOL 5280 or 6280.

BIOL 5300 PLANT ANATOMY AND DEVELOPMENT (4) LEC. 3. LAB. 4. Pr., BIOL 3100. Investigation of the various levels of plant organization from subcellular to organ through use of light and scanning electron microscopes.

BIOL 5320 PLANT GENE EXPRESSION (4) LEC. 4. Pr., BIOL 3100. Genetic expression of genetic elements in plants from the recent literature. Departmental approval.

BIOL 5330 DEVELOPMENTAL GENETICS (3) LEC. 3. Pr., BIOL 3000. Study of the genetics and genetic mechanisms behind developmental processes occurring in a range of species. May count either BIOL 5330 or BIOL 6330.

BIOL 5340 PROTOZOOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 3000. Life history, identification, cell biology, and evolution of free-living and parasitic protozoa of the major groups. Laboratory includes techniques for microscopy.

BIOL 5350 BEHAVIORAL ECOLOGY (3) LEC. 3. Pr., BIOL 3030 and BIOL 3060. Evolution of behaviors via natural, sexual, and kin selections; evolutionary influences on social groups, mating systems, cooperative breeding, and other interactions.

BIOL 5360 POPULATION ECOLOGY (3) LEC. 3. Pr., BIOL 3060 and (MATH 1610 or MATH 1617). Quantitative study of populations, including life tables, Leslie matrices, exponential and logistic models, metapopulations, and life-history theory. Departmental approval.

BIOL 5370 MOLECULAR ECOLOGY (3) LEC. 3. Pr., BIOL 3000 and BIOL 3030. General overview of the concepts and techniques regarding the application of molecular variation in answering questions pertaining to populations and communities of organisms. Credit will not be given for both BIOL 5370 and BIOL 6370.

BIOL 5375 MARINE SCIENCE FOR ELEMENTARY SCHOOL TEACHERS (3) LEC. 3. Pr., At least 6 credits in BIOL 1000-8990. Principle-centered training in a broad spectrum of subjects relating marine science to health, reading, social studies, language, arithmetic, science, and art. Taught at Gulf Coast Research Laboratory. Departmental approval and 6 hours in basic biology science.

BIOL 5380 GENERAL ICHTHYOLOGY (4) LEC. 3. LAB. 4. Pr., BIOL 1030 or BIOL 1037. Survey of the biodiversity of world and local fishes with an overview of ecology, behavior, biology, and conservation of fishes.

BIOL 5415 SALT MARSH PLANT ECOLOGY (4) LEC. 2. LAB. 2. Pr., BIOL 3100. The plant ecology of salt marshes.

BIOL 5425 MARINE BOTANY (4) LEC. 4.

BIOL 5435 COASTAL VEGETATION (4) LEC. 2. LAB. 2. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3100. Study of different coastal ecosystems with an emphasis on plant vegetation.

BIOL 5455 MARSH ECOLOGY (4) LEC. 4.

BIOL 5465 MARINE MICROBIOLOGY (5) LEC. 3. LAB. 2. Pr., BIOL 3200 and BIOL 4600. The role of microorganisms in marine environments. Departmental approval.

BIOL 5475 OCEANOLOGY OF THE GULF OF MEXICO (3) LEC. 2. LAB. 2. A descriptive study of the oceanology of the Gulf of Mexico and adjacent waters including coastal zone, continental shelf, and deep ocean. Summer. Departmental approval.

BIOL 5495 MARINE PROTOZOOLOGY (3) LEC. 2. LAB. 3. Treatment of the major groups of protists from marine habitats including their taxonomy, structure, ecology, and methods of studying. Introductory Biology.

BIOL 5500 IMMUNOLOGY (3) LEC. 3. Pr., BIOL 3200 and BIOL 3000. The cellular and molecular basis of the immune response, including antigen presentation, immunogenetics, effector mechanisms, and medical immunology.

BIOL 5501 IMMUNOLOGY LAB (2) LAB. 4. Pr., P/C, BIOL 5500. Techniques illustrating principles of antigen-antibody interactions and their application in immunoassays, identification of leukocytes, cellular interactions, and antibody production.

BIOL 5510 BIOGEOGRAPHY (3) LEC. 3. Patterns and processes associated with the distribution of living and fossil organisms.

BIOL 5521 GENE EXPRESSION AND RECOMBINANT DNA LABORATORY (2) LEC. 2. LAB. 4. Pr., P/C, BIOL 5220. Laboratory experiences demonstrating concepts and techniques in recombinant DNA.

BIOL 5525 MARINE BEHAVIORAL ECOLOGY (4) LEC. 3. LAB. 3. Study of animal behavior and the influence by and interaction with the environment and the ecological and evolutionary significance of these behaviors. Summer. Vertebrate and Invertebrate Zoology.

BIOL 5535 MARINE CONSERVATION BIOLOGY (4) LEC. 3. LAB. 3. Examination of conservation biology based on previous study of marine ecology. Summer. General or Marine Ecology course.

BIOL 5550 WETLAND BIOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 3060. Biology of world wetland habitats. Field trips, paper, and presentation required.

BIOL 5600 MAMMALIAN PHYSIOLOGY (BIOMEDICAL PHYSIOLOGY) (6) LEC. 5. LAB. 3. Pr., (BIOL 1030 or BIOL 1037 or BIOL 2500) and CHEM 2080. An in-depth investigation of the physiology of the major mammalian organ systems.

BIOL 5605 MAMMALIAN PHYSIOLOGY (6) LEC. 5. LAB. 3. To give students a detailed overview of human physiology. Students will learn the normal function of the body systems through reading, lecture and discussion.

BIOL 5650 ETHOLOGY (4) LEC. 3. LAB. 3. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3060. Animal behaviors, analysis of their adaptive value, development, and evolution.

BIOL 5660 FOOD MICROBIOLOGY (5) LEC. 3. LAB. 6. Pr., BIOL 3200. The role of microorganisms in food production and food spoilage with basic training in the microbiological analysis food.

BIOL 5700 APPLIED AND ENVIRONMENTAL MICROBIOLOGY (4) LEC. 3. LAB. 2. Pr., BIOL 3200. Introduction to the ecology, systematics, interrelationships, and role of micro-organisms in geochemical cycles, bioremediation and pharmaceutical production.

BIOL 5740 HERPETOLOGY (4) LEC. 3. LAB. 3. Ecology and evolution of living amphibians and reptiles of the world.

BIOL 5750 ORNITHOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 3030 and BIOL 3060. Taxonomy, evolution, ecology, and behavior of birds.

BIOL 5760 MAMMALOLOGY (4) LEC. 3. LAB. 3. Characteristics, origins, ecology, behavior, reproduction, physiology, and diversity of mammals. Labs include survey or current literature, field trips, data analysis, and report preparation. Departmental approval.

BIOL 6020 DEVELOPMENTAL BIOLOGY (3) LEC. 3. Pr., BIOL 4100 and BIOL 4410. Consideration of induction, constancy of the genome, pathfinding by migrating cells, morphogenetic movements, and other developmental processes.

BIOL 6090 CONSERVATION BIOLOGY (3) LEC. 3. Pr., BIOL 3060. This course is an overview of ethical, economic and biological aspects of conservation biology at scales ranging from local to global. Credit will not be given for both BIOL 5090 and BIOL 6090.

BIOL 6110 PARASITOLOGY (4) LEC. 3. LAB. 3. Pr., (BIOL 1030 or BIOL 1037) or BIOL 2500. Development, identification, host-parasite relationships, and medical significance of parasitic protozoa, helminthes, and arthropods that infect humans, domestic animals, and wildlife.

BIOL 6120 SYSTEMATIC BOTANY (4) LEC. 3. LAB. 3. Pr., (BIOL 1030 or BIOL 1037). Classification, nomenclature, distribution, systematics, and evolution of vascular plants.

BIOL 6130 ADVANCED PLANT PHYSIOLOGY (3) LEC. 3. Pr., BIOL 3100 and BIOL 2080. Coreq., BIOL 6131. Physiological and biochemical processes effecting plant growth and development including water relations, photosynthesis, respiration, and hormones.

BIOL 6131 ADV PLANT PHYSIOLOGY LAB (1) LAB. 3. Pr., BIOL 3101 and CHEM 2081. Coreq., BIOL 6130. Laboratory exercises in plant physiology. Including water relations, metabolism, and growth and development.

BIOL 6140 PLANT ECOLOGY (4) LEC. 3. LAB. 4. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3060. Exploration of ecological interactions between plants and their environment. Field trips emphasize Southeastern habitats/plant examples. Includes 3-day weekend field trip. Departmental approval.

BIOL 6150 COMMUNITY ECOLOGY (3) LEC. 3. Pr., BIOL 3060. Dynamics of ecological communities, including niches, species interactions, succession, island biogeography, biodiversity and food webs. May count BIOL 5150 or BIOL 6150.

BIOL 6160 FIELD BIOLOGY AND ECOLOGY (3-15) LEC. 3. Pr., At least 15 credits in BIOL 1000-8990. Intensive classroom and field studies of an area outside Alabama. Course may be repeated for a maximum of 15 credit hours. Departmental approval and 15 hours of biology.

BIOL 6190 CELL AND MOLECULAR SIGNAL TRANSDUCTION (3) LEC. 3. Pr., BIOL 4100 and BIOL 5220 and CHEM 2080. Study of cellular communication and regulation with emphasis on integration between cellular, molecular, genetic, and biochemical approaches.

BIOL 6210 MICROBIAL PHYSIOLOGY (3) LEC. 3. Pr., BIOL 3200 and CHEM 2070. General physiology of microbial cells emphasizing fermentation, respiration, photosynthesis, nitrogen fixation, cell wall synthesis, membranes, and macromolecular synthesis.

BIOL 6220 INTRODUCTORY MOLECULAR GENETICS (3) LEC. 3. Pr., BIOL 3000 and BIOL 3200. Advanced principles of gene expression including replication, transcription and translation; structure and regulation of genes; detailed concepts and techniques in recombinant DNA. Credit will not be given for both BIOL 6220 and CMBL 6220.

BIOL 6230 VIROLOGY (3) LEC. 3. Pr., (P/C, BIOL 5220 or P/C, BIOL 6220) or (P/C, BIOL 5260 or P/C, BIOL 6260). Biology of viruses, including structure, entry, replication, assembly and release, pathogenesis, and epidemiology of viral infections. May count BIOL 5230 or BIOL 6230.

BIOL 6240 ANIMAL PHYSIOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 4100 or CHEM 2070. General overview of the function of the major systems in animals, including evolution and adaptation to specific environments.

BIOL 6250 MICROBIAL EVOLUTION AND DIVERSITY (4) LEC. 3. LAB. 2. Pr., BIOL 3000 and BIOL 3200. Introduction to microbial evolutionary history and theory, and survey of microbial diversity. Credit will not be given for both BIOL 5250 and BIOL 6250.

BIOL 6260 PROKARYOTIC MOLECULAR GENETICS (3) LEC. 3. Pr., BIOL 3000 and BIOL 3200. Molecular principles of bacterial genetics including gene structure, genetic organization, regulation of gene expression, acquisition and loss of genes leading to microbial evolution. Course will not be given for both BIOL 5260 and BIOL 6260.

BIOL 6270 HOST-MICROBE INTERACTIONS (3) LEC. 3. Pr., BIOL 3200 and (BIOL 5200 or BIOL 5260). This course will explore interactions between microbes and their hosts including plants, insects and animals. Credit will not be given for both BIOL 5270 and BIOL 6270.

BIOL 6280 GENETHICS (3) LEC. 3. Pr., BIOL 3000. Twenty-first century biotechnology and related ethical issues, including human cloning, stem cells, neuroenhancement, age retardation, genetic enhancement, and nanobiology. May count BIOL 5280 or 6280.

BIOL 6300 PLANT ANATOMY AND DEVELOPMENT (4) LEC. 2. LAB. 4. Pr., BIOL 6130. The study of the structure and ontogeny of plant cells, tissues, and organs. Fall.

BIOL 6320 PLANT GENE EXPRESSION (4) LEC. 4. Pr., BIOL 5320. Genetic expression of genetic elements in plants from the recent literature. Credit will not be given for both BIOL 6320 and CMBL 6320. Departmental approval.

BIOL 6330 DEVELOPMENTAL GENETICS (3) LEC. 3. Pr., BIOL 3000. Study of the genetics and genetic mechanisms behind developmental processes occurring in a range of species. May count either BIOL 6330 or BIOL 5330.

BIOL 6340 PROTOZOOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 3000. Life history, identification, cell biology, and evolution of free-living and parasitic protozoa of the major groups. Laboratory includes techniques for microscopy.

BIOL 6350 BEHAVIORAL ECOLOGY (3) LEC. 3. Pr., BIOL 3030 and BIOL 3060. Evolution of behaviors via natural, sexual, and kin selections; evolutionary influences on social groups, mating systems, cooperative breeding, and other interactions.

BIOL 6360 POPULATION ECOLOGY (3) LEC. 3. Pr., BIOL 3060. Quantitative study of populations, including life tables, Leslie matrices, exponential and logistic models, metapopulations, and life-history theory. Departmental approval.

BIOL 6370 MOLECULAR ECOLOGY (3) LEC. 3. Pr., BIOL 3000 and BIOL 3060. General overview of the concepts and techniques regarding the application of molecular variation in answering questions pertaining to populations and communities of organisms. Credit will not be given for both BIOL 5370 and BIOL 6370.

BIOL 6375 MARINE SCIENCE FOR ELEMENTARY SCHOOL TEACHERS (3) LEC. 3. Principle-centered training in a broad spectrum of subjects relating marine science to health, reading, social studies, language, arithmetic, science, and art. Taught at Gulf Coast Research Laboratory. Departmental approval and 6 hours in basic biological science.

BIOL 6380 GENERAL ICHTHYOLOGY (4) LEC. 3. LAB. 4. Pr., BIOL 1030 or BIOL 1037. Survey of the biodiversity of world and local fishes with an overview of ecology, behavior, biology, and conservation of fishes.

BIOL 6415 SALT MARSH PLANT ECOLOGY (4) LEC. 2. LAB. 2. Pr., BIOL 3100. The plant ecology of salt marshes.

BIOL 6425 MARINE BOTANY (4) LEC. 4.

BIOL 6435 COASTAL VEGETATION (4) LEC. 2. LAB. 2. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3100. Study of different coastal ecosystems with an emphasis on plant vegetation.

BIOL 6455 MARSH ECOLOGY (4) LEC. 4.

BIOL 6465 MARINE MICROBIOLOGY (5) LEC. 3. LAB. 2. Pr., BIOL 3200 and BIOL 4600. The role of microorganisms in marine environments. Departmental approval.

BIOL 6475 OCEANOLOGY OF THE GULF OF MEXICO (3) LEC. 2. LAB. 2. A descriptive study of the oceanology of the Gulf of Mexico and adjacent waters including coastal zone, continental shelf, and deep ocean. Summer. Departmental approval.

BIOL 6495 MARINE PROTOZOOLOGY (3) LEC. 2. LAB. 3. Treatment of the major groups of protists from marine habitats including their taxonomy, structure, ecology, and methods of studying.

BIOL 6500 IMMUNOLOGY (3) LEC. 3. Pr., BIOL 3200 and BIOL 3000. Coreq., BIOL 6501. The cellular and molecular basis of the immune response, including antigen presentation, immunogenetics, effector mechanisms, and medical immunology.

BIOL 6501 IMMUNOLOGY LABORATORY (2) LAB. 4. Pr., BIOL 5500 or BIOL 6500. Coreq., BIOL 6500. Techniques illustrating principles of antigen-antibody interactions and their application in immunoassays, identification of leukocytes, cellular interactions, and antibody production.

BIOL 6510 BIOGEOGRAPHY (3) LEC. 3. Patterns and processes associated with the distribution of living and fossil organisms. Departmental approval.

BIOL 6521 GENE EXPRESSION AND RECOMBINANT DNA LABORATORY (2) LEC. 2. LAB. 4. Pr., P/C, BIOL 5220 or P/C, BIOL 6220. Laboratory experiences demonstrating concepts and techniques in recombinant DNA.

BIOL 6525 MARINE BEHAVIORAL ECOLOGY (4) LEC. 3. LAB. 3. Study of animal behavior and the influence by and interaction with the environment and the ecological and evolutionary significance of these behaviors. Vertebrate and Invertebrate Zoology required.

BIOL 6535 MARINE BEHAVIORAL ECOLOGY (4) LEC. 3. LAB. 3. Examination of conservation biology based on previous study of marine ecology. General or Marine Ecology course required.

BIOL 6550 WETLAND BIOLOGY (4) LEC. 4. LAB. 3. Pr., BIOL 3060. Biology of world wetland habitats. Field trips, research project, presentation, and paper discussion required.

BIOL 6600 MAMMALIAN PHYSIOLOGY (BIOMEDICAL PHYSIOLOGY) (6) LEC. 5. LAB. 3. Pr., (BIOL 1030 or BIOL 1037 or BIOL 2500) and CHEM 2080. An in-depth investigation of the physiology of the major mammalian organ systems.

BIOL 6650 ETHOLOGY (4) LEC. 3. LAB. 3. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3060. Animal behaviors, analysis of their adaptive value, development, and evolution.

BIOL 6660 FOOD MICROBIOLOGY (5) LEC. 3. LAB. 2. Pr., BIOL 3200. The role of microorganisms food production and food spoilage with basic training in the microbiological analysis of food.

BIOL 6700 APPLIED AND ENVIRONMENTAL MICROBIOLOGY (4) LEC. 3. LAB. 2. Pr., BIOL 3200. An advanced treatment of bacteria comprising the Kingdom Prokaryotae, emphasizing ecology, systematics, interrelationships, geochemical cycles, and bioremediation.

BIOL 6740 HERPETOLOGY (4) LEC. 3. LAB. 3. Ecology and evolution of living amphibians and reptiles of the world.

BIOL 6750 ORNITHOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 3030 and BIOL 3060. An intensive investigation of the current literature and relevant research dealing with birds. Departmental approval.

BIOL 6760 MAMMALOGY (4) LEC. 3. LAB. 3. Characteristics, origins, ecology, behavior, reproduction, physiology, and diversity of mammals. Labs include survey or current literature, fieldtrips, data analysis and report preparation. Departmental approval.

BIOL 7000 ADVANCED PARASITOLOGY (3) LEC. 3. Pr., BIOL 6110 or BIOL 5110. Interactions of organisms with their environments and characteristics of populations, communities, and ecosystems. Eight hours of Biology or departmental approval.

BIOL 7010 FUNDAMENTALS OF TEACHING BIOLOGY (1) LEC. 1. SU. Course may be repeated for a maximum of 6 credit hours.

BIOL 7030 ADVANCED ICHTHYOLOGY (6) LEC. 6. LAB. 32. Pr., BIOL 6380 or FISH 6380. Survey of the biodiversity of freshwater fishes in the southeastern United States through intensive field trips and sampling. Credit will not be given for both BIOL 7030 and FISH 7030.

BIOL 7060 ADVANCED MAMMALOGY (4) LEC. 3. LAB. 3. Pr., BIOL 6760. Current literature in mammalogy, collections management, and professional aspects of mammalogy. Labs include preparing specimens, curating research collections, fieldtrips, library work, data analysis, and report preparation.

BIOL 7125 COASTAL ECOSYSTEMS DYNAMICS (2) LEC. 2. Investigation of the basic principles of ecosystem structure and function. Biological Oceanography, Advanced Marine Ecology, Fisheries Oceanography recommended.

BIOL 7160 SYSTEMATIC ICHTHYOLOGY (3) LEC. 3. Pr., BIOL 6380. The principles of systematics and their application to the study of the evolution of fishes. Emphasizes individual and group work with faunistic literature and museum material.

BIOL 7170 POPULATION GENETICS (3) LEC. 3. Pr., BIOL 3000. Examination of the theories relating to maintenance of variation in natural populations of plants and animals.

BIOL 7190 COMPARATIVE PHYSIOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 6240. Evolution of physiological and biochemical systems in invertebrates and lower vertebrates and adaptations to specific environments. Departmental approval.

BIOL 7200 EVOLUTIONARY BIOLOGY (3) LEC. 3. Pr., BIOL 3000 and BIOL 3200. Topics of current interest in evolution. Readings and presentation required.

BIOL 7225 FIELD MARINE SCIENCE - MAINE (2) LEC. 1. LAB. 4. Field study in Maine emphasizing rocky intertidal, kelp bed, and eel grass habitats.

BIOL 7270 ULTRASTRUCTURE PLANT CELLS AND MICROBES (5) LEC. 3. LAB. 4. Theory and practice of transmission and scanning electron microscopy and their applications to the biological sciences. Credit will not be given for both BIOL 7270 and CMBL 7270. Spring. Departmental approval.

BIOL 7280 PLANT HORMONES (2) LEC. 2. Pr., BIOL 6130. Synthesis, physiology, and mode of action of the major plant hormones including abscisic acid, auxins, cytokinins, ethylene, and gibberellins.

BIOL 7290 EVOLUTIONARY GENETICS (3) LEC. 3. Pr., BIOL 3000 and BIOL 6170. The role of population processes as mechanisms for evolution; and evolution at the molecular level. Credit will not be given for both BIOL 7290 and CMBL 7290. Departmental approval.

BIOL 7330 MOLECULAR BIOLOGY OF PLANT DEVELOPMENT (2) LEC. 2. Pr., BIOL 6130 and BIOL 7280. Physiological, biochemical, and molecular aspects of plant growth and development. Credit will not be given for both BIOL 7330 and CMBL 7330. Departmental approval.

BIOL 7340 WATER RELATIONS AND ENVIRONMENTAL STRESS (2) LEC. 2.

BIOL 7370 STREAM ECOLOGY (4) LEC. 3. LAB. 3. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3060. Physical, chemical, and biological aspects of stream ecosystems emphasizing effects of natural environmental factors and human influences on stream biota, and quantitative methods used to study stream ecology.

BIOL 7380 ECOLOGY AND MANAGEMENT OF RIVERINE SYSTEMS (4) LEC. 3. LAB. 3. Pr., BIOL 7370. River systems within a landscape ecology and ecosystem management context. Laboratory sessions stress techniques for assessment and management.

BIOL 7440 ADVANCED CELL BIOLOGY (3) LEC. 3. Pr., BIOL 4100. Examination of current areas of research in cell and developmental biology by directed reading and discussion. Credit will not be given for both BIOL 7440 and CMBL 7440.

BIOL 7490 PHYSIOLOGICAL ECOLOGY (3) LEC. 3. Pr., BIOL 3060. A study of the physiological adaptations that allow animals to survive in unusual environments. A course in ecology required.

BIOL 7515 OCEANOLOGY OF THE GULF OF MEXICO (3) LEC. 3.

BIOL 7530 ADVANCED SYSTEMATIC BOTANY (3) LEC. 3. Morphological and molecular approaches to modern systematics of plants.

BIOL 7540 PROFESSIONAL ASPECTS OF BIOLOGY (3) LEC. 3. Instruction on practical aspects of a career in biological sciences. Departmental approval.

BIOL 7560 PLANT/ANIMAL INTERACTIONS (3) LEC. 3. Pr., BIOL 3100 and BIOL 3060. Overview of ecological and evolutionary interrelationships between animals and plants, including pollination biology, dispersal ecology, carnivory, and plant-herbivore interactions. Departmental approval.

BIOL 7620 MICROBIOLOGY OF EPIDEMICS (3) LEC. 3. Pr., BIOL 4200. Epidemics of communicable disease outbreaks are analyzed according to the hosts, modes of transmission, environment, and pathogenesis of the agents. Departmental approval.

BIOL 7705 TROPICAL BIOLOGY: ECOLOGICAL APPROACH (8) LEC. 4. LAB. 12. Pr., At least 15 credits in BIOL 6000-8990. An in-depth introduction to the principles of ecology in the tropics. Orientation and introductory lecture in San Jose, Costa Rica, followed by field work during an 8 week period. 15 hours of graduate level biological science.

BIOL 7715 TROPICAL AGRO ECOLOGY (8) LEC. 4. LAB. 12. Pr., At least 20 credits in BIOL 6000-8990. Application of ecological principles to tropical agricultural systems with emphasis on research training. Orientation in San Jose, Costa Rica followed by visits to 3 main habitats.

BIOL 7720 PROKARYOTIC GENE REGULATION (3) LEC. 3. Pr., BIOL 6210 and (BIOL 6180 or CHEM 6180). Discussion of gene expression in bacteria using the current literature.

BIOL 7950 MASTERS THESIS SEMINAR (1) LEC. 1. SU. Oral presentation and discussion of research in the field of specialization. Course may be repeated for a maximum of 2 credit hours. Departmental approval.

BIOL 7960 SPECIAL PROBLEMS (1-4) LEC. Pr., P/C, BIOL 6220. Oral presentation and discussion of recent scientific publications from a selected area molecular biology. Credit will not be given for both BIOL 7960 and CMBL 7960. Course may be repeated for a maximum of 4 credit hours.

BIOL 7970 SPECIAL TOPICS (1-4) AAB. Instruction and discussion in a selected current topic in botany, microbiology, molecular biology, or zoology. A different topic for advanced study will be selected each semester this course is offered. Course may be repeated for a maximum of 8 credit hours. Departmental approval.

BIOL 7990 RESEARCH AND THESIS (1-10) MST. Course may be repeated with change in topic.

BIOL 8950 DOCTORAL SEMINAR (1) SEM. 1. SU. Oral presentation and discussion of research in the field of specialization. Course may be repeated for a maximum of 3 credit hours.

BIOL 8990 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with change in topic.

Biosystems Engineering - BSEN

Courses

BSEN 2210 ENGINEERING METHODS FOR BIOLOGICAL SYSTEMS (2) LEC. 1. LAB. 3. Pr., ENGR 1110 and PHYS 1600., Or departmental approval. Introduction to experimental design methodology, basic engineering design and problem solving methodology for Biological Engineering. Visualization skills, computer-aided 3-D solid modeling of parts, 3-D assembly of solid part geometries, computation of mass properties, 2-D engineering drawings, engineering design process, safety, tools and fabrication processes and design, and hands-on shop fabrication of semester project.

BSEN 2240 BIOLOGICAL AND BIOENVIRONMENTAL HEAT AND MASS TRANSFER (3) LEC. 3. Pr., MATH 2630 and PHYS 1600 and P/C, ENGR 2010. Basic principles of heat and mass transfer with special applications to biological and environmental systems. Introduction to steady state and transient heat conduction. Convection, radiation, diffusion, simultaneous heat and mass transfer, and generation and depletion of heat and mass in biological systems.

BSEN 3210 MECHANICAL POWER FOR BIOSYSTEMS (3) LEC. 2. LAB. 3. Pr., ENGR 2010 and MATH 2650 and P/C, ENGR 2350. Basic engineering analysis, synthesis, and design concepts applied to power sources, mobile equipment, and machinery applications for agricultural, forestry, and natural resource systems.

BSEN 3230 NATURAL RESOURCE CONSERVATION ENGINEERING (3) LEC. 2. LAB. 3. Pr., BSEN 3310. Engineering analysis applied to natural resource systems. Design principles and practices in rainfall-runoff relationships, soil erosion and its prediction and control, hydraulic structures, and open channel hydraulics. Departmental approval.

BSEN 3240 PROCESS ENGINEERING IN BIOSYSTEMS (3) LEC. 2. LAB. 3. Pr., BSEN 2240. Theory and application of process operations in biological, food and agricultural systems. Heat transfer, fluid flow, thermal processing, evaporation, psychrometrics, refrigeration, drying freezing. Departmental approval.

BSEN 3260 ENGINEERING FOR PRECISION AGRICULTURE AND FORESTRY (3) LEC. 2. LAB. 3. Pr., ELEC 3810 and MATH 2650. Engineering aspects of spatial technologies applied to agricultural and forest production. Data collection in the field using GPS and use of field data in site specific applications. Fall. Departmental approval.

BSEN 3310 HYDRAULIC TRANSPORT IN BIOLOGICAL SYSTEMS (4) LEC. 3. LAB. 3. Pr., ENGR 2050 and MATH 2650. Departmental approval. Fluid properties, Non-Newtonian fluids and biological systems, Fluid statics, Energy equation, mass and momentum balance, pipe flow for Newtonian and Non-Newtonian fluids, dimensional analysis, compressible flows.

BSEN 3500 NATURAL RESOURCE SYSTEMS CONSERVATION (3) LEC. 2. LAB. 3. Pr., MATH 1130. Natural resource conservation technologies including rainfall-runoff relationships, sediment transport capacity, runoff control structures, water supply development, surveying techniques including GPS methods.

BSEN 3510 AGRICULTURAL POWER AND MACHINERY FUNDAMENTALS (3) LEC. 2. LAB. 3. Pr., MATH 1130. Power unit fundamentals with emphasis on diesel and small gasoline engines; mechanics of operation, safety, use, and adjustment of machines used for horticultural and agronomic crop production; and precision agriculture principles and technology.

BSEN 3530 AGRICULTURAL PRODUCTION AND PROCESSING FACILITY TECHNOLOGY (3) LEC. 3. Pr., MATH 1130. Fundamental requirements for the design and operation of agricultural production and processing facilities.

BSEN 3560 TURF SYSTEMS IRRIGATION DESIGN (3) LEC. 3. Pr., MATH 1130. Irrigation system design for turf-based systems including residential lawns, commercial properties, athletic fields, and golf courses. Irrigation scheduling and water demand are presented to provide management capabilities.

BSEN 3610 INSTRUMENTATION AND CONTROLS FOR BIOLOGICAL SYSTEMS (3) LEC. 2. LAB. 3. Pr., MATH 2650 and BSEN 2210. Understanding of fundamentals of electrical circuits, sensing and sensors, simple digital electronics, analog measurement circuits, introductory digital signal processing, computer data acquisition. Departmental approval.

BSEN 4210 IRRIGATION SYSTEM DESIGN (3) LEC. 2. LAB. 3. Pr., BSEN 3230. Theory and design of irrigation systems for the application of water and wastewater including surveying techniques for system design. Systems include solid-set, traveler, center-pivot, and trickle. Fall. Departmental approval.

BSEN 4250 HYDRAULIC CONTROL SYSTEMS DESIGN (3) LEC. 2. LAB. 3. Pr., CIVL 3110 or MECH 3030. Principles of energy transfer by means of fluid power. Design of hydraulic control systems using prime movers, valves, actuators, and accessories. Spring.

BSEN 4300 PROFESSIONAL PRACTICE IN BIOSYSTEMS ENGINEERING (2) LEC. 1. LAB. 3. Pr., BSEN 3230. This course focuses on issues related to the professional practice of biological engineering including preparing students for transition to careers as professional engineers. Departmental approval.

BSEN 4310 ENGINEERING DESIGN FOR BIOSYSTEMS (3) LEC. 1. LAB. 6. Pr., BSEN 4300. Departmental approval. Capstone design course in biosystems engineering emphasizing teamwork, communication, safety engineering, and economic analysis to complete an engineering design project. Spring.

BSEN 4960 SPECIAL PROBLEMS IN BIOSYSTEMS ENGINEERING (1-4) AAB/IND. Or departmental approval. Faculty supervision of individual student investigations of specialized problems in biosystems engineering. May be repeated with change in problem. Course may be repeated with change in topics.

BSEN 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. Course may be repeated for a maximum of 3 credit hours.

BSEN 4970 SPECIAL TOPICS IN BIOSYSTEMS ENGINEERING (1-4) LEC. Or departmental approval. Individual or small group study of a specialized area in biosystems engineering. Course may be repeated for a maximum of 12 credit hours.

BSEN 4980 UNDERGRADUATE RESEARCH (2-4) IND. Directed research in the area of specialty within the department. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

BSEN 4997 HONORS THESIS (1-3) IND. Pr., Honors College. Course may be repeated for a maximum of 3 credit hours.

BSEN 5220 GEOSPATIAL TECHNOLOGIES IN BIOSYSTEMS (3) LEC. 2. LAB. 3. Pr., STAT 2510 or STAT 2513 or STAT 2610 or STAT 3010 or AGRN 2040., Or departmental approval. Geospatial technologies including GPS, GIS, and remote sensing systems applied to biosystems. Collecting, managing, and analyzing spatial data for agricultural and forest systems. Spring.

BSEN 5230 WASTE MANAGEMENT AND UTILIZATION FOR BIOSYSTEMS (3) LEC. 2. LAB. 3. Pr., CHEM 1040 and BIOL 3200 and P/C, BSEN 3230. Introduction to animal waste management problems of confined production systems, and characterization of animal waste types. Design of biological treatment and processing systems. Departmental approval. May count either BSEN 5230 or BSEN 6230.

BSEN 5250 DETERMINISTIC MODELING FOR BIOSYSTEMS (3) LEC. 3. LAB. 2. Pr., MATH 2650 and ELEC 3810 and (ENGR 2350 or MECH 2110)., Or departmental approval. Modeling of biosystems, methods to deal with complexity, and validation tools. Spring.

BSEN 5260 RENEWABLE ENERGY IN BIOSYSTEMS PROCESS OPERATIONS (3) LEC. 2. LAB. 3. Pr., BSEN 3310. Application and use of renewable energy in biological, food, forest and agricultural systems including biomass bioenergy, solar energy, wind power and geothermal. Departmental approval. May count either BSEN 5260 or BSEN 6260.

BSEN 5510 ECOLOGICAL ENGINEERING (3) LEC. 3. Pr., BSEN 3230. Ecological engineering non-point source transport of nutrients, sediment, pesticides, pathogens, and chemicals from agricultural, forestry, and urban activities. Departmental approval. May count either BSEN 5510 or BSEN 6510.

BSEN 5520 WATERSHED MODELING (3) LEC. 3. Pr., BSEN 5510. Modeling of non-point source pollution at watershed scale using Soil and Water Assessment Tool model including underlying processes that control movement of pollutants. Departmental approval. May count either BSEN 5520 or BSEN 6520.

BSEN 5540 BIOMASS AND BIOFUELS ENGINEERING (3) LEC. 2. LAB. 3. Pr., CHEM 1040 and MATH 2650 and BSEN 3310. This course introduces the various processes and engineering principles in converting biomass into biofuels and chemicals. The focus will be on thermochemical and biochemical conversion platforms. May count either BSEN 5540 or BSEN 6540.

BSEN 5550 PRINCIPLES OF FOOD ENGINEERING TECHNOLOGY (4) LEC. 3. LAB. 3. Pr., MATH 1130 and PHYS 1000. Engineering concepts and unit operations used in processing food products. Fall.

BSEN 5560 SITE DESIGN FOR BIOSYSTEMS (3) LEC. 2. LAB. 3. Pr., BSEN 3230. Development of student skills in computer-aided site design and restoration by using rural and urban best management practices to reduce environmental impacts. Departmental approval. May count either BSEN 5560 or BSEN 6560.

BSEN 6220 GEOSPATIAL TECHNOLOGIES IN BIOSYSTEMS (3) LEC. 2. LAB. 3. Departmental approval. Geospatial technologies including GPS, GIS, and remote sensing systems applied to biosystems. Collecting, managing, and analyzing spatial data for agricultural and forest systems. Spring.

BSEN 6230 WASTE MANAGEMENT AND UTILIZATION FOR BIOSYSTEMS (3) LEC. 2. LAB. 3. Pr., CHEM 1040 or CHEM 1041. Coreq., BSEN 3230. Introduction to the animal waste management problems of confined production systems and characterization of animal waste types. Design of biological treatment and processing systems. Departmental approval.

BSEN 6250 DETERMINISTIC MODELING FOR BIOSYSTEMS (3) LEC. 2. LAB. 3. Pr., MATH 2650 and ELEC 3810 and (ENGR 2350 or MECH 2110)., Or departmental approval. Modeling of biosystems, methods to deal with complexity, and validation tools. Spring.

BSEN 6260 RENEWABLE ENERGY IN BIOSYSTEMS PROCESS OPERATIONS (3) LEC. 2. LAB. 3. Pr., BSEN 3310. Application and use of renewable energy in biological, food forest and agricultural systems including biomass and bioenergy, solar energy, wind power and geothermal. Departmental approval.

BSEN 6510 ECOLOGICAL ENGINEERING (3) LEC. 3. Pr., BSEN 3230. The course introduces students to ecological engineering non-point source transport of nutrients, sediment, pesticides, pathogens, and chemicals from agricultural, forestry, and urban activities. Departmental approval.

BSEN 6520 WATERSHED MODELING (3) LEC. 3. The course covers modeling of non-point source pollution at the watershed scale using Soil and Water Assessment Tool model including underlying processes that control movement of pollutants. Departmental approval.

BSEN 6540 BIOMASS AND BIOFUELS ENGINEERING (3) LEC. 2. LAB. 3. Pr., CHEM 1040 and MATH 2650 and BSEN 3310. This course introduces the various processes and engineering principles in converting biomass into biofuels and chemicals. The focus will be on thermochemical and biochemical conversion platforms. May count either BSEN 5540 or BSEN 6540.

BSEN 6550 PRINCIPLES OF FOOD ENGINEERING TECHNOLOGY (4) LEC. 3. LAB. 3. Pr., MATH 1130 and PHYS 1000. Engineering concepts and unit operations used in processing food products. Fall.

BSEN 6560 SITE DESIGN FOR BIOSYSTEMS (3) LEC. 2. LAB. 3. Pr., BSEN 3230. The course is designed to develop student skills in computer-aided site design and restoration by using rural and urban best management practices to reduce environmental impacts. Departmental approval.

BSEN 7020/7026 SITE-SPECIFIC TECHNOLOGIES FOR AGRICULTURE AND FORESTRY SYSTEMS (3) LEC. 2. LAB. 3. Introduction to advanced concepts of off-highway vehicle equipment for use in agricultural and forestry production with emphasis on site-specific management (Precision Agriculture/Forestry). The course will overview new concepts and technologies for equipment usage and technologies applied for site-specific crop management. Departmental approval.

BSEN 7050 SOIL DYNAMICS OF TILLAGE AND TRACTION (3) LEC. 3. Pr., CIVL 4300 and AGRN 7590. Analyses and measurements of soil reactions as affected by physical properties of soil when subjected to forces imposed by tillage implements and traction devices. Departmental approval.

BSEN 7110/7116 FUNDAMENTALS OF INSTRUMENTATION FOR BIOLOGICAL SYSTEMS (3) LEC. 2. LAB. 3. Students will gain an understanding of the fundamentals of sensing and sensors, simple digital electronics and measurement circuits, introductory digital signal processing, and computer data acquisition. They will be required to build and test instrumentation to collect data on biological systems that might include fluid flow, pressure, force, or other transducers. Departmental approval.

BSEN 7120 STOCHASTIC MODELING FOR BIOSYSTEMS (3) LEC. 3. Pr., CIVL 3020. Solving problems in biosystems engineering and related fields by modeling data with probability distributions, spatial statistics, autoregressive models, Monte-Carlo simulation, and reliability methods. Departmental approval.

BSEN 7220 RENEWABLE ENERGY SYSTEMS DESIGN, ANALYSIS AND APPLICATIONS (3) LEC. 3. Understanding of the basic principles, applications, modeling, energetic and economic analysis of renewable energy resources namely solar, biomass, wind, hydropower and geothermal. Design of renewable energy systems.

BSEN 7240 BULK SOLIDS STORAGE, HANDLING AND TRANSPORTATION (3) LEC. 3. Sampling of particulate materials, bulk solids characterization, flow properties, particle and bulk solid flow, dynamics of fluid/solids systems, hydraulic and pneumatic conveyor design, storage bin and hopper design and geometry, safety issues.

BSEN 7260 ADVANCED UNIT OPERATIONS IN BIOSYSTEMS ENGINEERING (3) LEC. 2. LAB. 3. The course is an advance analysis of the unit operations used to process and enhance the value of biological materials.

BSEN 7280 FOOD THERMAL PROCESSING (3) LEC. 2. LAB. 3. Insight of technologies and approaches used in food thermal processing for commercial purposes. Application of fundamentals of heat transfer, thermo-bacteriology, physical and chemical kinetics of food, and plant layout. Departmental approval.

BSEN 7310 NONPOINT SOURCE POLLUTION (3) LEC. 3. Non-point source (NPS) transport of nutrients, sediment, pesticides, and pathogens from agricultural, forestry, and urban activities. Basic concepts of pollutant transport through soils and with overland flow. Evaluation, management, and prevention of non-point pollution of surface and groundwater. Departmental approval.

BSEN 7320 NON-POINT SOURCE POLLUTION MODELING (3) LEC. 3. Pr., BSEN 7310., Or departmental approval. Non-point source (NPS) modeling of nutrients, sediment, pesticides, and pathogens from agricultural, forestry, and urban activities. Underlying processes (climate, hydrology, nutrients and pesticides, erosion, channel), land cover/plants best management practices. Sensitivity and uncertainty analyses

BSEN 7330 SOIL-PLANT-ENVIRONMENTAL SYSTEM DESIGN SOIL-PLANT-ENVIRONMENTAL SYSTEM DESIGN (3) LEC. 3. Study of systems that incorporate plant uptake of nutrients and/or heavy metals for remediation of soil-based contaminants. Design applications of environmental remediation include constructed wetlands, drip irrigation of wastewater effluent, disposal of municipal sludge, and phytoremediation of contaminants in shallow groundwater.

BSEN 7350 ENGINEERING ANALYSIS OF LAKES AND RESERVOIRS (3) LEC. 3. Knowledge and understanding of the causes, impacts, and methods of restoring water quality impairments, with emphasis placed on impounded water bodies and perennial streams. Departmental approval.

BSEN 7900 SPECIAL PROBLEMS IN BIOSYSTEMS ENGINEERING (1-4) IND. Faculty supervision of individual student investigations of advanced specialized problems in biosystems engineering at the graduate level. Pr., Departmental approval. Course may be repeated with change in topics.

BSEN 7950 SEMINAR (1) SEM. SU. Reviews and discussions of research techniques, current scientific literature, and recent developments in biosystems engineering. Course may be repeated for a maximum of 12 credit hours.

BSEN 7970 SPECIAL TOPICS IN BIOSYSTEMS ENGINEERING (1-4) IND. Individual or small group study of an advanced specialized area in biosystems engineering at the graduate level. Pr., departmental approval. Course may be repeated with change in topics.

BSEN 7990 RESEARCH AND THESIS (1-10) MST. Course may be repeated with change in topic.

BSEN 8990 RESEARCH AND DISSERTATION (1-12) DSR. Departmental approval.

Building Science - BSCI

Courses

BSCI 1100 INTRODUCTION TO CONSTRUCTION (3) LEC. 3. Introduction to construction industry and education, current issues, and career opportunities.

BSCI 2100 INTRODUCTION TO SUSTAINABLE CONSTRUCTION (1) LEC. 1. Overview of Sustainability, Green Building and Sustainable Construction.

BSCI 2200 CONSTRUCTION COMMUNICATION (3) LEC. 2. LAB. 8. Reading and interpreting working drawings, specifications, shop drawings, and digital 3D models for use in estimating and administrating various types of construction projects.

BSCI 2300 CONSTRUCTION METHODS AND MATERIALS (3) LEC. 3. Materials, methods and construction equipment used in the construction of buildings.

BSCI 2400 STRUCTURE OF BUILDINGS (3) LEC. 3. Pr., PHYS 1500 or PHYS 1600 and (MATH 1610 or MATH 1617) or MATH 1150. Principles of mechanics and material behavior related to building structures. Includes: force systems, frame analysis, section properties, stress, and basic design and structural elements.

BSCI 3110 ENVIRONMENTAL CONTROL II (2) LEC. 2. Pr., BSCI 3100. Survey of the effects of climate, design, materials, and systems on the energy consumption and human environment of buildings. Alternative energy sources are also included.

BSCI 3300 FIELD SURVEYING (2) LEC. 1. LAB. 6. Surveying techniques, construction layout, use of equipment, and dimensional controls for buildings. Surveying camp, a concentrated, 10 working day course held during breaks.

BSCI 3400 STRUCTURES II (3) LEC. 3. Pr., BSCI 2400. Primary and secondary member design, connection design, temporary bracing/shoring, and steel shop drawing review.

BSCI 3420 STRUCTURES FOR BUILDERS II: WOOD, STEEL, ETC. (4) LEC. 3. LAB. 3. Pr., BSCI 2400. The third Structures course provides students an applied approach to steel and wood design and analysis of building framing systems.

BSCI 3430 STRUCTURES FOR BUILDERS III: SOILS AND CONCRETE (4) LEC. 3. LAB. 3. Pr., BSCI 3420. Use of soils and concrete in the construction of buildings and structures. Includes laboratory exercises.

BSCI 3450 STRUCTURES III (3) LEC. 3. Pr., BSCI 3400. Introduction to the design of reinforced concrete and related formwork including beams, columns, slabs, footings, retaining walls, and pre-stressed members.

BSCI 3500 CONSTRUCTION INFORMATION TECHNOLOGY (4) LEC. 2. LAB. 4. To explore, discover and create applications of information communication technology (ICT) for Construction Processes.

BSCI 3600 PROJECT CONTROLS I (4) LEC. 3. LAB. 3. Introduction to estimating in construction and skill competency for quantity survey: Quantity takeoff, and bid preparation.

BSCI 3650 PROJECT CONTROLS II (4) LEC. 3. LAB. 2. Pr., BSCI 3600. Project (s) simulation as context to discuss: 1) negotiated procurement; 2) pre-construction services in the alternative delivery environment; and 3) construction phase management procedures.

BSCI 3700 CONSTRUCTION SAFETY HOISTING (3) LEC. 3. Pr., P/C, BSCI 3600. Construction safety, including OSHA guidelines, accident investigation, and the creating of construction safety plans and worker training program.

BSCI 3840 SUSTAINABLE ENERGY DESIGN (3) LEC. 2. LAB. 6. Pr., BSCI 3110. Environmentally conscious/green energy use in building design. Course includes lectures. Primarily a project-based course.

BSCI 3910 EXPERIMENTAL LEARNING (3) LEC. 3. SU. Requires daily log and employer certification. Departmental approval.

BSCI 4200 RESIDENTIAL CONSTRUCTION (3) LEC. 3. Provides an overview of residential construction and development practices and professional issues including: local ordinances and codes, land use law, financing practices, architect-builder relationship, spec homes vs. custom homes, etc.

BSCI 4300 COMBINED ESTIMATING AND SCHEDULING FOR DESIGNERS (3) LEC. 3. Provides an overview of estimating and project planning practices and techniques which relate to interactions between the architect and constructor. Includes: sources of project costs, conceptual estimating, value engineering, CPM scheduling, cost of acceleration and delays, change order, etc.

BSCI 4400 CONSTRUCTION STRUCTURES (2) LEC. 2. Pr., BSCI 4600. Temporary construction methods and design principles to insure stability of structures during all phases of the construction process. Includes: concrete formwork, trench shoring, temporary bracing, rigging, and materials handling.

BSCI 4410 PROBLEMS IN CONSTRUCTION MEANS AND METHODS (3) LEC. 2. LAB. 2. Solving challenging problems encountered in construction processes, including form work, scaffolding, framing, steel erection, rigging, lifting, safety, and site management.

BSCI 4600 PROJECT CONTROLS III (4) LEC. 4. Pr., BSCI 3650. In-depth study of construction project sequencing and scheduling, as well as cost control measures, construction cash flow analysis, and a variety of leadership and management issues.

BSCI 4601 PROJECT CONTROLS III CIT LAB (1) LAB. 2. Pr., BSCI 3650 and P/C, BSCI 4600. Software applications for construction projects scheduling and cost control measures; expanding students' exposure and competency in software applications related to Building Information Modeling.

BSCI 4700 MECHANICAL SYSTEMS IN BUILDINGS (3) LEC. 2. LAB. 2. Pr., BSCI 3500 and BSCI 3600. Plumbing and mechanical systems of building; basic design, sustainability concepts, systems, installation and testing are covered.

BSCI 4710 MECHANICAL CONSTRUCTION ESTIMATING AND MANAGEMENT (3) LEC. 2. LAB. 2. Pr., BSCI 4600. Advance study of mechanical construction industry. Study and application of design principles, estimating and management techniques used in the industry.

BSCI 4750 ELECTRICAL SYSTEMS IN BUILDINGS (3) LEC. 2. LAB. 2. Pr., BSCI 3500 and BSCI 3600. Electrical systems commonly used in buildings; basic theory and design concepts, with emphasis on lighting and electrical distribution equipment and its installation.

BSCI 4800 CONTRACTING BUSINESS (4) LEC. 4. Pr., BSCI 3650. Business functions associated with industry; organizational structure, construction finance; risk analysis, construction contracts, project delivery, and associated documents.

BSCI 4850 CONSTRUCTION LAW AND RISK MANAGEMENT (3) LEC. 3. Pr., BSCI 4600. Construction law, business law and risk management; the legal system and terminology, contracts, insurance, warranties, liens, environmental concerns, workplace issues, damages, and dispute resolution.

BSCI 4860 ADVANCED CONSTRUCTION INFORMATION TECHNOLOGY (3) LEC. 2. LAB. 2. Pr., BSCI 3500. Exploration and creation of advanced applications of Information and Communication Technology (ICT) for planning, decision making, projects monitoring, and controls.

BSCI 4870 CONSTRUCTION HISTORY (3) LEC. 3. Survey of historic construction projects to analyze how and why buildings and structures were constructed in the way they were.

BSCI 4880 CONSTRUCTION EQUIPMENT MANAGEMENT (3) LEC. 3. Construction equipment management and ownership. Equipment acquisition and disposition options, production costs and productivity, cost analysis and control, management staffing and responsibilities.

BSCI 4890 LEAN CONSTRUCTION PRINCIPLES AND PRACTICES (3) LEC. 3. Pr., BSCI 3650. This course provides an understanding of Lean Construction principles involving Lean Design, Assembly, Supply, Production and Work Processes.

BSCI 4920 BUSINESS INTERNSHIP (1-3) INT. SU. Pr., ACCT 2110 and ECON 2020 and ECON 2030 and FINC 3610 and MKTG 3310 and MNGT 3100. Internship option for students to gain work experience who seek general or free elective credit. Approval of instructor prior to internship, and completion or current enrollment in two or more of the following: ACCT 2110, ECON 2020, ECON 2030, FINC 3610, MNGT 3100, MKTG 3310.

BSCI 4960 SPECIAL PROBLEMS (1-5) IND. Special problems in construction topics. Course may be repeated for a maximum of 5 credit hours.

BSCI 4970 SPECIAL TOPICS IN BUILDING SCIENCE (3) LEC. 3. Survey of historic construction projects to analyze how and why building & structures were constructed in the way they were.

BSCI 4990 BUILDING SCIENCE THESIS (4) LAB. 12. Individual project demonstrating mastery of curriculum content through the application of skills/knowledge to a theoretical construction company and project. Requires a written thesis and oral defense of work.

BSCI 5120 CONSTRUCTION ISSUES ABROAD (3) LEC. 1, FLD/LEC. 4. Study Abroad prep class. BSCI xxxx. Study of construction issues and related project management practices in countries outside of the United States. Course may be repeated for a maximum of 6 credit hours.

BSCI 5130 CULTURES & ENVIRONMENTS ABROAD (3) LEC. 1. LAB. 4. The study of the culture, history, geography, and the natural and built environments of countries outside of the United States and how they have influenced the construction industry. Departmental approval.

BSCI 5450 BUILDING GREAT STRUCTURES (3) LEC. 3. Conceptual Analysis of a variety of structural systems using observation and modeling of the world's greatest structures. Emphasis on construction innovations necessary to build these structures. May count either BSCI 5450 or BSCI 6450. Departmental approval.

BSCI 5460 QUANTITATIVE METHODS IN CONSTRUCTION (3) LEC. 3. Applications of quantitative methods in various phases of project life cycle to assist project stakeholders in making informed decisions. Departmental approval.

BSCI 5820 CONSTRUCTION LABOR AND PRODUCTIVITY (3) LEC. 3. Construction labor issues, productivity measurement and productivity improvement in the construction industry. Includes readings, research, and out-of-class projects.

BSCI 5830 GLOBAL CONSTRUCTION MANAGEMENT (3) LEC. 3. This course will discuss global construction issues and related project management practices. Departmental approval. May count either BSCI 5830 or BSCI 6830.

BSCI 5840 MULTI-CULTURAL ISSUES IN CONS (3) LEC. 3.

BSCI 5960 SPECIAL PROBLEMS (1-5) AAB. Special problems in construction topics. Offered only at the discretion of the department head. This course may not be used to replace any required Building Science course. Departmental approval.

BSCI 5970 SPECIAL PROBLEMS (1-5) AAB. Special problems in construction topics. Offered only at the discretion of the department head. This course may not be used to replace any required Building Science course. Departmental approval. Course may be repeated for a maximum of 15 credit hours.

BSCI 6120 CONSTRUCTION ISSUES ABROAD (3) LEC. 1, FLD/LEC. 4. Study Abroad prep class. BSCI xxxx. Study of construction issues and related project management practices in countries outside of the United States. Course may be repeated for a maximum of 6 credit hours.

BSCI 6130 CULTURES & ENVIRONMENTS ABROAD (3) LEC. 1. LAB. 4. The study of the culture, history, geography, and the natural and built environments of countries outside of the United States and how they have influenced the construction industry. Departmental approval.

BSCI 6450 BUILDING GREAT STRUCTURES (3) LEC. 3. Conceptual Analysis of a variety of structural systems using observation and modeling of the world's greatest structures. Emphasis on construction innovations necessary to build these structures. May count either BSCI 5450 or BSCI 6450.

BSCI 6460 QUANTITATIVE METHODS IN CONSTRUCTION (3) LEC. 3. Applications of quantitative methods in various phases of project life cycle to assist project stakeholders in making informed decisions. Departmental approval.

BSCI 6820 CONST LABOR & PRODUCTIVITY (3) LEC. 3. Construction labor issues, productivity measurement and productivity improvement in the construction industry. Includes readings, research, and out-of-class projects.

BSCI 6830 GLOBAL CONSTRUCTION MANAGEMENT (3) LEC. 3. This course will discuss global construction issues and related project management practices. Departmental approval. May count either BSCI 5830 or BSCI 6830.

BSCI 6840 MULTI-CULTURAL ISSUES IN CONSTRUCTION LABOR (3) LEC. 3.

BSCI 6960 SPECIAL PROBLEMS IN CONSTRUCTION (3) LEC. 3. Individually proposed problems or projects related to the construction industry. Students must prepare a written proposal with defined deliverables. Course may be repeated for a maximum of 3 credit hours. Departmental approval.

BSCI 6970 SPECIAL PROBLEMS IN CONSTRUCTION (1-3) LAB. Individually proposed problems or projects related to the construction industry. Students must prepare a written proposal with defined deliverables. Course may be repeated for a maximum of 3 credit hours. Departmental approval.

BSCI 7010 CONSTRUCTION LABOR AND PRODUCTIVITY (3) LEC. 3. Construction labor issues, productivity measurement, and productivity improvement in the construction industry. Includes reading, research, and an out of class project. Departmental approval.

BSCI 7020/7026 INTEGRATED BUILDING PROCESSES I (3) LEC. 3. Departmental approval. Project manifestation and development preceding design and construction phases with emphasis on the project owner's perspective, the financial parameters, and the speculative demand driving project viability.

BSCI 7030/7036 CONSTRUCTION INFORMATION MANAGEMENT (3) LEC. 3. Applications of advanced information technology in construction.

BSCI 7040/7046 INTEGRATED BUILDING PROCESSES II (3) LEC. 3. Construction project delivery, from pre-construction service through ownership. Topics include project management, pre-construction services, pre-planning, procurement, site utilization, subcontracts, commissioning, closeout, building operation, and long-term ownership. Departmental approval.

BSCI 7050/7056 EXECUTIVE ISSUES IN CONSTRUCTION (3) LEC. 3. Construction industry executives will present 6 to 10 topics that represent a cross-section of significant management issues.

BSCI 7060 RESEARCH METHODS IN BUILDING SCIENCE (3) LEC. 3. A study of the academic research process, with an emphasis on defining research problems in construction and the development of a research proposal.

BSCI 7100/7106 GRADUATE ELECTIVE IN PROJECT MANAGEMENT: PROJECT MANAGEMENT AND SCHEDULING (3) LEC. 3. This course develops advanced student knowledge and skills in construction business facets such as delivery, contracts and financial management; and develops tactile skills in producing advanced construction schedules in current software applications. Credit will not be given for both BSCI 7100 and BSCI 7406. Course may be repeated with change in topics.

BSCI 7200 ELECTIVES IN CONSTRUCTION LABOR (3) LEC. 3. Special course offerings related to construction labor topics. Course may be repeated with change in topic. Departmental approval.

BSCI 7300 ELECTIVES IN INFORMATION TECHNOLOGY AND INNOVATION (3) LEC. 3. Special course offerings related to information technology, innovation, and robotics in construction. Course may be repeated with change in topic. Departmental approval.

BSCI 7900 DIRECTED READING IN CONST (1-3) IND. Individually proposed exploration of a construction industry related topic not covered in existing course offerings. Students must prepare a written proposal of the topic. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

BSCI 7950 GRADUATE SEMINAR (1) SEM. 1. Departmental approval. Project manifestation and development preceding design and construction phases with emphasis on the project owner's perspective, the financial parameters, and the speculative demand driving project viability. Course may be repeated for a maximum of 3 credit hours.

BSCI 7980/7986 CAPSTONE PROJECT (3) LAB. 6. Independent exploration of an approved topic with final written report of findings and an oral defense of the work. Specific capstone project requirements are established by the supervising committee and vary based on the chosen topic. Departmental approval.

Business Admin - BUSI

Courses

BUSI 1010 CONTEMPORARY ISSUES IN BUSINESS ADMINISTRATION I (1) LEC. 1. Exposure to various topics relative to business administration. For Business majors, should be taken during student's first academic year.

BUSI 2010 CONTEMPORARY ISSUES IN BUSINESS ADMINISTRATION (1) LEC. 1. Orientation to business administration. Business majors should take during student's second academic year.

BUSI 2100 ORAL COMMUNICATION FOR BUSINESS (1) LEC. 12. LAB. 9. Theories and techniques of strong oral communication skills, with real-world applications for business.

BUSI 2900 DIRECTED STUDIES (1-3) IND. SU. Independent study option for freshmen and sophomores in the College of Business for students who seek general or free elective credit. Course may be repeated for a maximum of 3 credit hours.

BUSI 3010 CONTEMPORARY ISSUES IN BUSINESS ADMINISTRATION III - INTERN/JOB SEARCH (1) LEC. 1. Preparation for conducting an intern/career position job search. Develop career planning and job search skills.

BUSI 3510 INTRODUCTION TO BUSINESS AND ENGINEERING (3) LEC. 3. Pr., admission to the BET minor program by application; restricted to BET students. Principles of business and engineering issues in new product and business development.

BUSI 3520 INTEGRATING BUSINESS AND ENGINEERING THEORIES WITH PRACTICE (3) LEC. 2. LAB. 3. Pr., BUSI/ENGR 3510 and in good standing in the BET minor program; restricted to BET students. Case study problems from business and engineering practice.

BUSI 3550 CROSS-FUNCTIONAL TEAMWORK (1) LEC. 1. Development of skills needed to perform well in cross-functional teams. Admission to the B-E-T program.

BUSI 3560 LEADERSHIP (1) LEC. 1. Overview of leadership concepts and skills. Admission to the B-E-T program.

BUSI 4010 CONTEMPORARY ISSUES IN BUSINESS ADMINISTRATION IV - SENIOR/NEW PROFESSIONAL (1) LEC. 1. Preparation for transition from college student to career professional. Lecture and case discussion format to discuss issues faced as a new professional. Fall, Spring.

BUSI 4540 ENTREPRENEURSHIP AND STRATEGIC MANAGEMENT OF TECHNOLOGY AND INNOVATION (4) LEC. 4. Pr., (BUSI 3510 or ENGR 3510) and (BUSI 3520 or ENGR 3520). Develop student skills for starting a new business and making strategic decisions concerning technology. Admission to the B-E-T program.

BUSI 4920 BUSINESS INTERNSHIP (1-3) AAB/INT. SU. Internship option for students to gain work experience who seek general or free elective credit. Approval of instructor prior to internship, and completion of or current enrollment in two or more of the following: ACCT 2110, ECON 2020, ECON 2030, FINC 3610, MNGT 3100, or MKTG 3310.

BUSI 4970 CAPSTONE PROJECT I: DESIGN PROPOSAL (1) LAB. 3. Coreq., BUSI 4540. Processes to develop and present design proposal for cooperating industry.

BUSI 4980 PRODUCT/PROCESS DESIGN AND DEVELOPMENT II (3) LEC. 1. LAB. 6. Pr., BUSI 4970 or ENGR 4970. Cross-functional team design projects for sponsoring industry.

BUSI 7110/7116 FINANCIAL ANALYSIS (3) LEC. 3. Integrated course combining financial accounting and corporate finance for MBA students. Departmental approval.

BUSI 7120/7126 QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS (3) LEC. 3. Integrated course in statistical methods and management science for MBA students. Departmental approval.

BUSI 7130/7136 STRATEGIC ANALYSIS AND THE COMPETITIVE ENVIRONMENT (3) LEC. 3. Integrated course covering business strategy and the external environment in a global context. Departmental approval.

BUSI 7140/7146 ORGANIZATIONAL LEADERSHIP AND CHANGE (3) LEC. 3. Integrated course covering aspects of individual and group behavior and assessment in organizations, effective team building, and leading organizations through change. Departmental approval.

BUSI 7210/7216 MARKETING AND CONSUMER THEORY (3) LEC. 3. Combines elements of the economics of demand theory and marketing management. Includes advanced pricing topics and the competitive environment. Departmental approval.

BUSI 7220/7226 OPERATIONS AND INFORMATION TECHNOLOGY FOR COMPETITIVE ADVANTAGE (3) LEC. 3. The structure of business operations and the role that information technology plays in formulating and implementing strategies for competitive advantage. Departmental approval.

BUSI 7230/7236 COST ANALYSIS AND SYSTEMS (3) LEC. 3. Integrates production and cost theory from economics with managerial and cost accounting theory and systems for MBA Departmental approval.

BUSI 7920/7926 MBA INTERNSHIP (1-6) AAB/INT. SU. Internship for MBA students in business organizations. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

BUSI 7970/7976 SPECIAL TOPICS IN BUSINESS ADMINISTRATION (1-3) AAB. Specialized topics in business administration not otherwise covered in existing courses. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

BUSI 7980/7986 INTEGRATED BUSINESS PROJECT AND CASE ANALYSIS (3) LEC. 3. Integrates knowledge gained from MBA classes and applies that knowledge to address actual business problems. Departmental approval.

Business Analytics - BUAL

Courses

BUAL 2600 BUSINESS ANALYTICS I (3) LEC. 3. Pr., (MATH 1610 or MATH 1680) and (P/C, COMP 1000 or P/C, COMP 1003 or COMP 1AA0).or equivalent, minimum 2.0 overall cumulative undergraduate GPA. Introduction to analytics in business including use of data to make business decisions, basic predictive business modeling, and communication of analytical results.

BUAL 3600 BUSINESS ANALYTICS II (3) LEC. 3. Pr., BUAL 2600 or MNGT 2600 or STAT 2610 or STAT 2010 or STAT 2017 or STAT 2510 or STAT 3010. Further examination of analytics in business including business inference, business classification analysis, predictive business modeling, forecasting, introduction to data mining. Minimum 2.0 overall cumulative undergraduate GPA.

BUAL 5600 PREDICTIVE MODELING I (3) LEC. 3. Pr., MNGT 2600 and MNGT 3600.or equivalent. Introduction to linear models including multiple linear regression and model building in business decision making and applications.

BUAL 5610 PREDICTIVE MODELING II (3) LEC. 3. Pr., MNGT 2600 and MNGT 3600 and (BUAL 5600 or BUAL 6600 or BUAL 6606).or equivalent. Basic data mining techniques including neural networks, decision trees, clustering algorithms, linear programs, text and web mining in business setting.

BUAL 5650 BIG DATA I (3) LEC. 3. Pr., MNGT 2600 and MNGT 3600.or equivalent. Managing, governing, extracting, merging, and preparing large data sets for analysis using real data. May count either BUAL 5650 or BUAL 6650/6656.

BUAL 5660 BIG DATA II (3) LEC. 3. Pr., (BUAL 5650 or BUAL 6650 or BUAL 6656).Advanced topics in big data management, with emphasis on loading and cleansing the data for analysis.

BUAL 5860 COMMUNICATING QUANTITATIVE RESULTS IN BUSINESS (3) LEC. 3. Pr., MNGT 2600 and MNGT 3600 and (BUAL 5650 or BUAL 6650 or BUAL 6656) and (BUAL 5610 or BUAL 6610 or BUAL 6616).A case-based, project-oriented approach to business decision making based on company's mission and strategic objectives.

BUAL 6600/6606 PREDICTIVE MODELING I (3) LEC. 3. Pr., MNGT 2600 and MNGT 3600.or equivalent.Introduction to linear models including multiple linear regression and model building in business decision making and applications.

BUAL 6610/6616 PREDICTIVE MODELING II (3) LEC. 3. Pr., MNGT 2600 and MNGT 3600 and (BUAL 5600 or BUAL 6600 or BUAL 6606). Basic data mining techniques including neural networks, decision trees, clustering algorithms, linear programs, text and web mining in business setting.

BUAL 6650/6656 BIG DATA I (3) LEC. 3. Pr., MNGT 2600 and MNGT 3600. Managing, governing, extracting, merging, and preparing large data sets for analysis using real data. May count either BUAL 5650 or BUAL 6650/6656.

BUAL 6660/6666 BIG DATA II (3) LEC. 3. Pr., (BUAL 5650 or BUAL 6650 or BUAL 6656). Advanced topics in big data management, with emphasis on loading and cleansing the data for analysis. May count either BUAL 5660 or BUAL 6660/6666.

BUAL 6860/6866 COMMUNICATING QUANTITATIVE RESULTS IN BUSINESS (3) LEC. 3. Pr., BUAL 2600 and MNGT 3600 and (BUAL 5650 or BUAL 6650 or BUAL 6656) and (BUAL 5610 or BUAL 6610 or BUAL 6616). A case-based, project-oriented approach to business decision making based on company's mission and strategic objectives.

Career and Technical - CTCT

Courses

CTCT 1200 KEYBOARDING AND FORMATTING (3) LEC. 1. LAB. 4. Mastery of alphanumeric keyboard with basic keyboarding and formatting applications of business documents. (Students with previous keyboarding/typewriting instruction consult with Business/Marketing Education faculty for placement.)

CTCT 2100 POWER EQUIPMENT TECHNOLOGY (3) LEC. 2. LAB. 3. Repair and maintenance of small air-cooled engines and power equipment in Agriculture. May count either CTCT 2100 and CTCT 3100.

CTCT 2200/2203 DOCUMENT PROCESSING (3) LEC. 1. LAB. 4. Advanced formatting, processing, and evaluation of business correspondence, as well as administrative and employment documents. Includes basic computer literacy skills. May count either CTCT 2200 or CTCT 2203.

CTCT 3000/3003 LEADERSHIP SKILLS FOR PERSONAL AND ORGANIZATIONAL DEVELOPMENT (3) LEC. 3. Organizational and leadership skills needed to become successful professionals in work or community activities; skills and strategies for conducting efficient meetings. Departmental approval. May count either CTCT 3000 or CTCT 3003.

CTCT 3200/3203 RECORDS MANAGEMENT (2) LEC. 2. Integrated records management systems, records management functions, classification systems, micrographics, electronic records, and records management careers. Departmental approval. May count either CTCT 3200 or CTCT 3203.

CTCT 3240/3243 INFORMATION PROCESSING I (3) LEC. 2. LAB. 2. Pr., CTCT 2200 or CTCT 2203. Exploration of organizational needs for text-based information processing. Functions and capabilities of text-based information processing components. Departmental approval. May count either CTCT 3240 or CTCT 3243.

CTCT 3250/3253 INFORMATION PROCESSING II (3) LEC. 2. LAB. 2. Pr., CTCT 3240 or CTCT 3243. Decision-making and business problem solving using microcomputer software applications including spreadsheets, database management programs, and operating systems. Departmental approval. May count either CTCT 3250 or CTCT 3253.

CTCT 4000/4003 CLASSROOM/LABORATORY MANAGEMENT, ORGANIZATION AND EVALUATION IN CAREER AND TECHNICAL EDUCATION (2) LEC. 2. Admission to Teacher Education. Organization, objectives, principles, management, and evaluation of career and technical education classrooms, laboratories, and programs. May count either CTCT 4000 or CTCT 4003.

CTCT 4030 CAREER AND TECHNICAL STUDENT ORGANIZATIONS (3) LEC. 3. Survey of career and technical student organizations; procedures involved in developing and implementing informal and co-curricular educational programs for students and preparing students for state and national competitions.

CTCT 4140 AGRICULTURAL STRUCTURE AND METAL FABRICATION TECHNOLOGY (3) LEC. 2. LAB. 3. Materials selection and construction procedures for carpentry, concrete, masonry, electricity, plumbing, and metal fabrication.

CTCT 4160 SUPERVISED AGRICULTURAL EXPERIENCE PROGRAMS (2) LEC. 2. Responsibility for SAEP planning, supervision, and evaluation of entrepreneurship, placement, exploratory, analytical, and experimental SAEPs and record books; completing award applications.

CTCT 4200/4203 MANAGING OFFICE SYSTEMS (3) LEC. 2. LAB. 2. Pr., CTCT 3250 or CTCT 3253. Capstone course with emphasis on integration of information processing procedures, administrative support, and management functions. Departmental approval. May count either CTCT 4200 or CTCT 4203.

CTCT 4900 DIRECTED STUDIES (1-6) IND. SU. The student's learning efforts are guided toward desired objectives. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTCT 4910 PRACTICUM IN AREA OF SPECIALIZATION (1-6) PRA. SU. Provides experience relating theory and practice, usually carried on simultaneously. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTCT 4920/4923 INTERNSHIP (10) INT. SU. Admission to Teacher Education. Supervised internship experiences in a school or other appropriate setting. Evaluation and analysis of the internship experience. Admission to internship.

CTCT 4940/4943 DIRECTED FIELD EXPERIENCE IN AREA OF SPECIALIZATION (1-3) FLD. SU. Supervised occupational work experience in an approved specialization-related occupation. Departmental approval. May count either CTCT 4940 or CTCT 4943. Course may be repeated for a maximum of 3 credit hours.

CTCT 4970 SPECIAL TOPICS IN AREA OF SPECIALIZATION (1-6) LEC. Current or special topics within area of specialization. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTCT 5050/5053 METHODS OF TEACHING IN AREA OF SPECIALIZATION (3) LEC. 2. LAB. 2. Admission to Teacher Education. Methods and techniques of instruction using appropriate instructional materials; planning and evaluation of instruction for programs within career and technical education. May count CTCT 5050, CTCT 5053, CTCT 6050, or CTCT 6056.

CTCT 5060 PROGRAM PLANNING IN AREA OF SPECIALIZATION (3) LEC. 3. Pr., CTCT 5050 or CTCT 5053. Admission to Teacher Education. Introduction to principles and practices involved in designing education programs in the area of specialization. May count CTCT 5060, CTCT 6060, or CTCT 6066.

CTCT 5080/5083 COORDINATION AND SUPERVISION OF WORK-BASED LEARNING (3) LEC. 3. Admission to Teacher Education. Coordination, placement, and supervision of students in work-experience programs; development of employability skills and habits in students. May count CTCT 5080, CTCT 5083, CTCT 6080, or CTCT 6086.

CTCT 6050/6056 METHODS OF TEACHING IN AREA OF SPECIALIZATION (3) LEC. 2. LAB. 2. Methods and techniques of instruction using appropriate instructional materials; planning and evaluation of instruction for programs within the area of specialization. Admission to alternative master's program. May count CTCT 5050, CTCT 5053, CTCT 6050, or CTCT 6056.

CTCT 6060/6066 PROGRAM PLANNING IN AREA OF SPECIALIZATION (3) LEC. 3. Introduction to principles and practices involved in designing educational programs in the area of specialization. Admission to alternative master's program. May count CTCT 5060, CTCT 6060, or CTCT 6066.

CTCT 6080/6086 COORDINATION AND SUPERVISION OF WORK-BASED LEARNING (3) LEC. 3. Coordination, placement, and supervision of students in work-experience programs; development of employability skills and habits in students. Departmental approval. May count CTCT 5080, CTCT 5083, CTCT 6080, or CTCT 6086.

CTCT 7000/7006 FOUNDATIONS OF CAREER AND TECHNICAL EDUCATION (3) LEC. 3. Philosophical, historical, economic, and sociological perspectives of vocational education in relation to the organization of vocational education programs. May count either CTCT 7000 or CTCT 7006.

CTCT 7010/7016 YOUTH PROGRAM DEVELOPMENT (3) LEC. 3. Developing, managing, and evaluating formal and informal youth education programs; training volunteers for youth development programs; securing and developing supporting resources. Departmental approval. May count either CTCT 7010 or CTCT 7016.

CTCT 7100/7106 TEACHING MECHANICAL TECHNOLOGY (3) LEC. 2. LAB. 2. Theory and practice of managing agricultural mechanics laboratories, theories of machine operation, and maintaining laboratory equipment. May count either CTCT 7100 or CTCT 7106.

CTCT 7120/7126 COURSES OF STUDY IN AGRISCIENCE EDUCATION (3) LEC. 3. Pr., CTCT 5060 or CTCT 6060 or CTCT 5063 or CTCT 6066. Emerging technologies in agriscience education; principles and procedures of curriculum construction applied to courses of study in agriscience education. Departmental approval. May count either CTCT 7120 or CTCT 7126.

CTCT 7200/7206 CAREER AND OCCUPATIONAL INFORMATION (3) LEC. 3. Trends and issues in occupational structure, job qualifications and requirements, and sources of occupational information for new and emerging occupations; analysis of career education models for students. Departmental approval. May count either CTCT 7200 or CTCT 7206.

CTCT 7240/7246 ADMINISTRATIVE MANAGEMENT (3) LEC. 3. Pr., CTCT 4200 or CTCT 4203. Management of office systems, information and personnel. Managing and controlling administrative services. Departmental approval. May count either CTCT 7240 or CTCT 7246.

CTCT 7300/7306 LEARNING RESOURCES IN AREA OF SPECIALIZATION (3) LEC. 3. Pr., CTCT 5050 or CTCT 6050 or CTCT 5053 or CTCT 6056. Selecting, developing, utilizing, and evaluating instructional resources and technology for teaching. Departmental approval. May count either CTCT 7300 or CTCT 7306.

CTCT 7710/7716 ADVANCED TEACHING METHODS (3) LEC. 3. Pr., (CTCT 5050 or CTCT 5053) or (CTCT 6050 or CTCT 6056). Analysis of research in theories of teaching and learning, effective teacher characteristics, learning styles, teaching methodologies, and diversity in teaching. Departmental approval. May count either CTCT 7710 or CTCT 7716.

CTCT 7720/7726 ADVANCED PROGRAM PLANNING IN AREA OF SPECIALIZATION (3) LEC. 3. Pr., CTCT 5060 or CTCT 6060 or CTCT 5063 or CTCT 6066. Issues affecting the development and management of educational programs; strategies for improving educational programs. Departmental approval. May count either CTCT 7720 or CTCT 7726.

CTCT 7730/7736 PROGRAM EVALUATION (3) LEC. 3. Pr., (CTCT 7720 or CTCT 7726). Principles and procedures used in evaluating academic- related programs. Alternative approaches to evaluation and practical guidelines for conducting evaluations. Departmental approval. May count either CTCT 7730 or CTCT 7736.

CTCT 7750/7756 ADMINISTRATION OF CAREER AND TECHNICAL EDUCATION (3) LEC. 2. LAB. 2. Introduction to concepts, theories and practices related to administration, organizational behavior, and leadership in secondary and post-secondary vocational education programs. Departmental approval. May count either CTCT 7750 or CTCT 7756.

CTCT 7760/7766 COMPREHENSIVE PLANNING IN CAREER AND TECHNICAL EDUCATION (3) LEC. 2. LAB. 2. Pr., (CTCT 7750 or CTCT 7756). Processes of comprehensive planning for vocational education programs at high school and secondary school levels using local, state, and regional data. Departmental approval. May count either CTCT 7760 or CTCT 7766.

CTCT 7770/7776 CLINICAL SUPERVISION (3) LEC. 3. Pr., (CTCT 7710 or CTCT 7716). Theories, concepts, models, and techniques of student teacher and beginning teacher supervision by administrators, school district personnel, and university supervisors. Recommended for individuals who supervise or plan to supervise student teachers. Departmental approval. May count either CTCT 7770 or CTCT 7776.

CTCT 7780/7786 RESEARCH IN CAREER AND TECHNICAL EDUCATION (3) LEC. 3. Review, analysis and interpretation of research procedures and data with emphasis on designing new research in vocational and adult education. Departmental approval. May count either CTCT 7780 or CTCT 7786.

CTCT 7810 SUPERVISED COLLEGE TEACHING (1) LEC. 1. SU. Practical experience in the classroom under the supervision of a faculty mentor. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

CTCT 7900/7906 DIRECTED STUDIES (1-3) IND. SU. Independent learning effort directed toward desired objectives. Includes evaluation at regular intervals by student and professor. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CTCT 7910/7916 PRACTICUM IN AREA OF SPECIALIZATION (1-3) PRA. SU. Experiences closely relating theory and practice. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CTCT 7920/7926 INTERNSHIP (1-10) INT. SU. Pr., CTCT 6050 or CTCT 6056. Supervised internship experiences in a school, college or other appropriate setting. Evaluation and analysis of the internship experience. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

CTCT 7950/7956 SEMINAR IN AREA OF SPECIALIZATION (1-3) SEM. SU. Presentation by graduate students of research projects and/or findings. Analysis of procedures and findings. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CTCT 7960/7966 SPECIAL PROBLEMS (1-3) IND. Critical analysis of current and classical research and writings. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CTCT 7970/7976 SPECIAL TOPICS IN AREA OF SPECIALIZATION (1-6) LEC. Current or advanced topics within area of specialization. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTCT 7990/7996 RESEARCH AND THESIS (1-10) MST. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

CTCT 8730/8736 CURRICULUM DEVELOPMENT IN CAREER AND TECHNICAL EDUCATION (3) LEC. 3. Pr., CTCT 7730 or CTCT 7736. Principles of career and technical education curriculum planning, identification of educational needs of students, selecting technical content, and evaluating materials. May count either CTCT 8730 or CTCT 8736.

CTCT 8770/8776 SUPERVISION OF INSTRUCTION (3) LEC. 3. Pr., CTCT 7770 or CTCT 7776. Theories and models to become effective supervisors of vocational and adult education programs; philosophies and styles of supervision used to improve schools, instruction, curriculum and personnel. Departmental approval. May count either CTCT 8870 or CTCT 8876.

CTCT 8800/8806 TEACHER EDUCATION (3) LEC. 3. Emphasis on beliefs, philosophy, issues, research, roles, student selection, curriculum, methodology, internships, organization, and administration of teacher education programs. Departmental approval. May count either CTCT 8800 or CTCT 8806.

CTCT 8810 SUPERVISED COLLEGE TEACHING (1-10) LEC. 3. Practical experience in the classroom under the supervision of a faculty mentor. Course may be repeated for a maximum of 10 credit hours.

CTCT 8900 DIRECTED STUDIES (1-6) IND. SU. Independent learning efforts at desired objectives. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTCT 8910 PRACTICUM IN AREA OF SPECIALIZATION (1-6) PRA. SU. Experiences closely relating theory and practice. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTCT 8920 INTERNSHIP (1-10) INT. SU. Supervised internship experiences in a school, college or other appropriate setting. Evaluation and analysis of the internship experience. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

CTCT 8950 SEMINAR IN AREA OF SPECIALIZATION (1-6) SEM. Selected concepts and theoretical formulations of common interest. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTCT 8960 SPECIAL PROBLEMS (1-6) IND. Critical analysis of current and classical research and writings. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTCT 8970 SPECIAL TOPICS IN AREA OF SPECIALIZATION (1-6) LEC. Current or advanced topics within area of specialization. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTCT 8980/8986 FIELD PROJECT (1-10) FLD. 1. SU. Field project. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

CTCT 8990/8996 RESEARCH AND DISSERTATION (1-10) DSR. Departmental approval. Course may be repeated for a maximum of 20 credit hours.

Cell and Molecular Biology - CMBL

Courses

CMBL 4150 HUMAN GENETICS (3) LEC. 3. Pr., BIOL 3000 and BIOL 4100 and CHEM 2080. Study of the biological interaction of genes, effects of mutation and changes in gene frequency in human populations. Emphasis on molecular approach to study evolutionary changes in human gene pools.

CMBL 5190 CELL AND MOLECULAR SIGNAL TRANSDUCTION (3) LEC. 3. Pr., BIOL 3000 and BIOL 4100 and BIOL 4220 and CHEM 2090. The study of cellular communication and regulation with emphasis on integration between cellular, molecular, genetic and biochemical approaches.

CMBL 5500 IMMUNOLOGY (3) LEC. 3. Pr., BIOL 3200 and BIOL 3000. The cellular and molecular basis of the immune response, including antigen presentation, immunogenetics, effector mechanisms and medical immunology.

CMBL 5501 IMMUNOLOGY LAB (2) LAB. 4. Coreq., BIOL 5500. Techniques illustrating principles of antigen-antibody interactions and their application in immunoassays, identification of leukocytes, cellular interactions and antibody production.

CMBL 6190 CELL AND MOLECULAR SIGNAL TRANSDUCTION (3) LEC. 3. Pr., BIOL 3000 and BIOL 4100 and BIOL 4050 and CHEM 2090. Study of cellular communication and regulation with emphasis on integration between cellular, molecular, genetic and biochemical approaches. Credit will not be given for both CMBL 6190 and BIOL 6190.

CMBL 6220 INTRODUCTION TO MOLECULAR GENETICS (3) LEC. 3. Pr., BIOL 3000 and BIOL 4510. Advanced principles of gene expression including replication, transcription and translation; structure and regulation of genes; detailed concepts and techniques in recombinant DNA. Credit will not be given for both CMBL 6220 and BIOL 6230.

CMBL 6230 VIROLOGY (4) LEC. 4. Pr., BIOL 3000 and BIOL 3200 and BIOL 4520. Molecular mechanisms of virus biology including virus-cell replication, assembly and release pathogens. Credit will not be given for both CMBL 6230 and BIOL 6230.

CMBL 6320 PLANT GENE EXPRESSION (4) LEC. 4. Pr., BIOL 5320. Genetic expression of genetic elements in plants from the recent literature. Credit will not be given for both BIOL and CMBL 6320. Departmental approval.

CMBL 6500 IMMUNOLOGY (3) LEC. 3. Pr., BIOL 3200 and BIOL 3000. The cellular and molecular basis of the immune response, including antigen presentation, immunogenetics, effector mechanisms, and medical immunology.

CMBL 6501 TECHNIQUES IN IMMUNOLOGY (2) LAB. 4. Techniques illustrating principles of antigen-antibody interactions and their application in immunoassays, identification of leukocytes, cellular interactions and antibody production.

CMBL 7070 PLANT BIOTECHNOLOGY (4) LEC. 2. LAB. 4. Pr., BIOL 3000. Plant biotechnology, including plant tissue culture technologies and genetic transformation and applications to horticultural crop improvement.

CMBL 7080 MOLECULAR ENDOCRINOLOGY (2) LEC. 2. Pr., VBMS 7070. Examination of the literature of hormonal synthesis, secretion and mechanism of action with emphasis on receptors, second messenger systems and gene regulation. Departmental approval.

CMBL 7270 ULTRASTRUCTURE OF PLANT CELLS AND MICROBES (5) LEC. 3. LAB. 4. Theory and practice of transmission and scanning electron microscopy and their application to the biological sciences. Credit will not be given for both CMBL 7270 and BIOL 7290. Departmental approval.

CMBL 7290 EVOLUTIONARY GENETICS (3) LEC. 3. Pr., BIOL 3000 and BIOL 6170. Examines two major topics: the role of population processes as mechanisms for evolution; and evolution at the molecular level. Credit will not be given for both CMBL 7290 and BIOL 7290. Departmental approval.

CMBL 7330 MOLECULAR BIOLOGY OF PLANT DEVELOPMENT (2) LEC. 2. Pr., BIOL 6130 and BIOL 7280. Physiological, biochemical and molecular aspects of plant growth and development. Credit will not be given for both CMBL 7330 and BIOL 7330. Departmental approval.

CMBL 7400 PLANT VIROLOGY (4) LEC. 3. LAB. 2. Pr., (PLPA 3000 or PLPA 6000) and CHEM 6180. Introduction to plant viruses and the diseases they cause; virus particle structure and replication strategies; disease identification by symptoms and detection of pathogen; transmission, ecology, epidemiology and control. Departmental approval.

CMBL 7440 ADVANCED CELL BIOLOGY (3) LEC. 3. Pr., BIOL 4100. Examination of current areas of research in cell and developmental biology by directed reading and discussion. Credit will not be given for both CMBL 7440 and BIOL 7440.

CMBL 7460 BACTERIAL PATHOGENESIS (3) LEC. 3. Pr., VBMS 7510 or BIOL 4520. Molecular and cellular basis of virulence of bacterial pathogens of animals. Departmental approval.

CMBL 7480 METHODS IN IMMUNOLOGY (5) LEC. 1. LAB. 8. Theoretical concept underlying immunological methods combined with practical hands-on immunological experimentation focused on application to research in the biological sciences. Departmental approval.

CMBL 7500 CELLULAR AND MOLECULAR IMMUNOLOGY (3) LEC. 2, LEC/RCT. 1. Pr., BIOL 6500. Current literature in immunology; emphasis on cellular/biochemical/genetic basis of immune response. Spring. Departmental approval.

CMBL 7510 MOLECULAR GENETICS I (5) LEC. 5. Pr., CHEM 7200. Bacterial, bacteriophage, and eukaryotic genetics, with a focus on gene structure, and molecular mechanisms regulation expression. Critical review of current literature will be emphasized.

CMBL 7520 MOLECULAR GENETICS II (5) LEC. 5. Pr., VBMS 7510. Genetic mechanisms by which eukaryotic cells replicate, communicate and differentiate. Current literature will be used extensively.

CMBL 7530 ADVANCED SYSTEMATIC BOTANY (3) LEC. 3. Pr., BIOL 6120. Morphological and molecular approaches to modern systematics of plants.

CMBL 7540 CURRENT TOPICS IN MOLECULAR VIROLOGY (3) LEC. 3. Pr., VBMS 7510 and VBMS 7520. Viral gene expression and evasion of host defense mechanisms.

CMBL 7660 MOLECULAR GENETICS AND BIOTECHNOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 3000. Principles and applications of DNA fingerprinting technologies, gene mapping, genetic information and analysis using internet tools, transgenic technologies. Credit will not be given for both CMBL 7660 and FISH 7660. Departmental approval.

CMBL 7960 READINGS IN MOLECULAR BIOLOGY (1) RCT. 1. Pr., P/C, BIOL 7220. Oral presentation and discussion of recent scientific publications from a selected area of molecular biology. Credit will not be given for both CMBL 7960 and BIOL 7960. Course may be repeated for a maximum of 4 credit hours.

CMBL 8160 LABORATORY TECHNIQUES IN MOLECULAR VIROLOGY (4) LEC. 1. LAB. 9. Pr., BIOL 4520 and BIOL 4530. Isolation, purification, and identification of viral nucleic acids and proteins. Credit will not be given for both CMBL 8160 and POUL 8160.

CMBL 8880 PHYSIOLOGICAL AND MOLECULAR PLANT PATHOLOGY (3) LEC. 2. LAB. 2. Pr., PLPA 6000 and CHEM 6180 and BIOL 4230. Comprehensive coverage of physiology and molecular biology of plant-pathogen interactions.

Chemical Engineering - CHEN

Courses

CHEN 2100 PRINCIPLES OF CHEMICAL ENGINEERING (4) LEC. 3. LAB. 3. Pr., (CHEM 1110 or CHEM 1117 or CHEM 1030) and (MATH 1610 or MATH 1617 or MATH 1710) and (P/C, CHEM 1120 or P/C, CHEM 1127 or P/C, CHEM 1040) and (P/C, MATH 1620 or P/C, MATH 1627 or P/C, MATH 1720) and (P/C, PHYS 1600 or P/C, PHYS 1607). Application of multicomponent material and energy balances to chemical processes involving phase changes and chemical reactions.

CHEN 2610 TRANSPORT I (3) LEC. 3. Pr., (PHYS 1600 or PHYS 1607) and CHEN 2100 and (P/C, MATH 2630 or P/C, MATH 2637) and P/C, ENGR 2010. Introduction to fluid statics and dynamics; dimensional analysis; compressible and incompressible flows; design of flow systems, introduction to fluid solids transport including fluidization, flow through process media and multiphase flows.

CHEN 2AA0 CHEMICAL ENGINEERING PROGRESS ASSESSMENT I (0) LAB. SU. Pr., P/C, CHEN 2100. Progress assessment examination in basic science, general chemistry, physics, basic math principles (geometry, algebra), multivariable calculus, chemical engineering process principles (mass and energy balances).

CHEN 3090 PULP AND PAPER TECHNOLOGY (3) LEC. 3. Pr., (CHEM 1030 or CHEM 1110 or CHEM 1117) and ENGR 2010. An introductory course on the technology of pulp and paper manufacturing with emphasis on raw materials, pulping, bleaching, paper making, coating and environmental control. For students with no previous formal pulp and paper background.

CHEN 3370 PHASE AND REACTION EQUILIBRIA (3) LEC. 3. Pr., (MATH 2630 or MATH 2637 or MATH 2730) and ENGR 2010 and CHEN 2100 and P/C, CHEN 3600. Molecular thermodynamics of phase and chemical reaction equilibria including non-ideal thermodynamics and multicomponent applications. (ENGR 2010 and CHEN 2100 require a grade of C or better).

CHEN 3410 CREATIVITY AND CRITICAL THINKING IN ENGINEERING (3) LEC. 3. Application of creativity and critical thinking principles to effectively approach solving engineering problems. Convincing presentation of information to technical audiences.

CHEN 3600 COMPUTER-AIDED CHEMICAL ENGINEERING (3) LEC. 2. LAB. 3. Pr., COMP 1200 and MATH 2650 and CHEN 2610. General and structured programming concepts, numerical methods, and introductory probability and statistics concepts. Application to chemical engineering problems involving material and energy balances and transport process, data validation, and analysis. (CHEN 2610 requires a grade of C or better).

CHEN 3620 TRANSPORT II (3) LEC. 3. Pr., (MATH 2630 or MATH 2637 or MATH 2730) and ENGR 2010 and CHEN 2610 and P/C, CHEN 3600. Fundamentals and applications of heat and mass transfer in chemical processes including conduction, convection, and radiation, heat exchange, evaporation, chemical reaction gas absorption, drying and humidification. (ENGR 2010 and CHEN 2610 require a grade of C or better).

CHEN 3650 CHEMICAL ENGINEERING ANALYSIS (3) LEC. 2. LAB. 3. Pr., CHEN 3600 and CHEN 3620 and CHEN 2AA0. Mathematical modeling, analytical, numerical and statistical analysis of chemical processes. (CHEN 3600 and CHEN 3620 require a grade of C or better).

CHEN 3660 CHEMICAL ENGINEERING SEPARATIONS (3) LEC. 3. Pr., CHEN 3370 and CHEN 3620. Separations processes including distillation, extraction, membrane separation, and other separation operations. (CHEN 3370 and CHEN 3620 require a grade of C or better).

CHEN 3700 CHEMICAL REACTION ENGINEERING (3) LEC. 3. Pr., MATH 2650 and CHEN 2610 and ENGR 2010 and P/C, CHEN 3620. Design of chemical reactors with homogeneous reaction systems. (CHEN 2610 and ENGR 2010 require a grade of C or better).

CHEN 3820 CHEMICAL ENGINEERING LABORATORY I (2) LEC. 1. LAB. 3. Pr., CHEN 3600 and CHEN 3620. Experimental study of chemical thermodynamics, heat and momentum transfer with analytical, numerical, and statistical analysis.

CHEN 3AA0 CHEMICAL ENGINEERING PROGRESS ASSESSMENT II (0) LAB. SU. Pr., CHEN 2AA0 and P/C, CHEN 3370 and P/C, CHEN 3650 and P/C, CHEN 3700 and P/C, CHEN 3660. Progress assessment examination in thermodynamics, linear differential equations, organic chemistry, transport phenomena (fluid mechanics, heat, mass transfer), phase and reaction equilibria, reaction engineering, design and conduction of experiments, analysis and interpretation of data, professional, ethical, societal and contemporary issues.

CHEN 4100 PULP AND PAPER PROCESSING LABORATORY (2) LAB. 6. Pr., CHEN 2610 and CHEN 3090 and CHEN 3820., or departmental approval. Experimental study of pulping and papermaking operations. Departmental approval.

CHEN 4160 PROCESS DYNAMICS AND CONTROL (3) LEC. 2. LAB. 3. Pr., CHEN 3600 and CHEN 3650. Dynamic modeling of chemical processes, feedback systems and analog controller tuning and design, sequential control systems. (CHEN 3600 and CHEN 3650 require a grade of C or better).

CHEN 4170 DIGITAL PROCESS CONTROL (3) LEC. 3. Pr., CHEN 3650. Introduction of basic concepts and principles for control system. Analysis of open loop and closed-loop processes using transfer functions.

CHEN 4180 ADVANCED DIGITAL PROCESS CONTROL (3) LEC. 2. LAB. 3. Pr., CHEN 4170. Application of sequential, closed loop and open loop process control principles to actual industrial and experimental control laboratory process. (CHEN 4170 requires a grade of C or better).

CHEN 4450 PROCESS ECONOMICS AND SAFETY (3) LEC. 2. LAB. 3. Pr., CHEM 2080 and CHEN 3370 and CHEN 3650 and CHEN 3660 and CHEN 3700. Fundamentals and applications of process economics and design, computer-aided cost estimation, profitability analysis and process improvement. Application of chemical process safety, risk assessment and management, hazard and operability analysis, chemical engineering principles for risk reduction. (CHEN 3370, CHEN 3650, CHEN 3660 and CHEN 3700 require a grade of C or better).

CHEN 4460 PROCESS SIMULATION SYNTHESIS AND OPTIMIZATION (2) LEC. 1. LAB. 3. Pr., CHEM 2080 and CHEN 3370 and CHEN 3650 and CHEN 3660 and CHEN 3700. Fundamentals of computer-aided simulation and synthesis. Process integration and optimization principles including their applications in design, retrofitting and operation of chemical processes. (CHEN 3370, CHEN 3650, CHEN 3660 and CHEN 3700 require a grade of C or better).

CHEN 4470 PROCESS DESIGN PRACTICE (3) LEC. 2. LAB. 3. Pr., CHEN 3AA0 and CHEN 4450 and CHEN 4460. Flow sheet simulation and techno-economic analysis applied to complex, open-ended chemical processes. Screening of alternatives and economic optimizations. Capstone design course.

CHEN 4560 PULP AND PAPER PROCESS SIMULATION (2) LEC. 1. LAB. 3. Pr., CHEM 2080 and CHEN 3090 and CHEN 3370 and CHEN 3650 and CHEN 3660 and CHEN 3700 and P/C, CHEN 4100 and P/C, CHEN 5110. Fundamentals of microcomputer process simulation with applications to the pulp and paper industry. Design of pulp and paper unit operations and small scale processes using commercial simulation software. (CHEN 3090, CHEN 3370, CHEN 3650, CHEN 3660 and CHEN 3700 require a grade of C or better).

CHEN 4570 PULP AND PAPER PROCESS DESIGN (3) LEC. 2. LAB. 3. Pr., CHEN 3AA0 and CHEN 4450 and CHEN 4560. Application of process simulation and process economics to complex, open-ended design, retrofitting and operation problems in pulp and paper. Design of pulp and paper unit operations and processes. Screening of alternatives and economic optimization.

CHEN 4630 INTRODUCTORY TO TRANSPORT PHENOMENA (3) LEC. 3. Pr., CHEN 3620 and CHEN 3650. Application of chemical engineering analysis to momentum, heat and mass transport problems for advanced undergraduate students preparing for graduate school. (CHEN 3620 and CHEN 3650 require a grade of C or better).

CHEN 4860 CHEMICAL ENGINEERING LABORATORY II (2) LEC. 1. LAB. 3. Pr., CHEN 3660 and CHEN 3820 and P/C, CHEN 3700. Experimental study of mass transfer, separations and reaction engineering. Emphasis is on open-ended laboratory projects with electronic instrumentation; experimental design with numerical and statistical analysis of data.

CHEN 4880 PULP AND PAPER ENGINEERING LABORATORY (3) LAB. 9. Pr., CHEN 4100 and CHEN 5110. Comprehensive open-ended projects on pulp and paper topics.

CHEN 4930 DIRECTED STUDIES (1) LEC. 1. Supervised study in specialized areas of chemical engineering. Topic must be arranged with instructor during preregistration. Project report.

CHEN 4970 SPECIAL TOPICS IN CHEMICAL ENGINEERING (1-10) AAB. Topical courses in special areas. Topic must be arranged with instructor during pre-registration. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

CHEN 4980 UNDERGRADUATE RESEARCH (1-3) IND. Pr., 3.00 GPA. Departmental approval; GPA of 3.0 or higher. Individual and small group projects. Topic must be arranged with instructor during preregistration. Research Report. Course may be repeated for a maximum of 3 credit hours.

CHEN 4997 HONORS THESIS (1-6) IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CHEN 5110 PULP AND PAPER ENGINEERING (3) LEC. 3. Pr., CHEN 3090 and CHEN 3620 and CHEN 3700 and P/C, CHEN 4450. Chemical and engineering principles in the manufacturing of pulp and paper. (CHEN 3090, CHEN 3620, and CHEN 3700 require a grade of C or better).

CHEN 5120 SURFACE AND COLLOID SCIENCE (3) LEC. 3. Pr., CHEN 3620 and CHEN 4100. Fundamentals of surface and colloid science with applications in pulping and papermaking, including sizing, retention and drainage, charge measurements, dry/wet strength additives, fillers, colorants, foams, pitch and deposits. (CHEN 3620 and CHEN 4100 require a grade of C or better).

CHEN 5400 MOLECULAR ENGINEERING (3) LEC. 3. Pr., CHEM 2080 and CHEN 3370 and P/C, CHEN 3700. Introduction to how molecular structure and long range microstructure affect the properties of chemical engineering products and how this knowledge can be used to design chemical engineering products for specific applications. (CHEN 3370 requires a grade of C or better).

CHEN 5410 MACROMOLECULAR SCIENCE AND ENGINEERING (3) LEC. 3. Pr., CHEM 2080 and CHEN 3370. Statistical mechanics of chain molecules; thermodynamics of polymer solutions; dilute, semi-dilute, and concentrated solutions and gels; polymer physics; scaling concepts in polymer physics; reptation theory (deGennes, Doi, Edwards) and molecular dynamics; phase separations; crystallization of polymers; rubber elasticity theory; mechanical analysis; viscoelasticity; diffusion theory of polymers; surface properties of polymers. (CHEN 3370 requires a grade of C or better).

CHEN 5420 POLYMER CHEMICAL ENGINEERING (3) LEC. 2. LAB. 3. Pr., CHEM 2070 and CHEN 3620 and CHEN 5410. Polymer rheology, transport phenomena, thermodynamics, membranes, conducting polymers, surfaces, interfaces and processing. (CHEN 3620 and CHEN 5410 require a grade of C or better).

CHEN 5430 BUSINESS ASPECTS OF CHEMICAL ENGINEERING (3) LEC. 3. Pr., Departmental Approval. The procession of activities required to successfully commercialize and market new chemical-engineering-based technologies to the consumer and process industries.

CHEN 5440 ELECTROCHEMICAL ENGINEERING (3) LEC. 3. Pr., CHEN 3370 and CHEN 3620 and CHEN 3700. Thermodynamics, electrode kinetics and transport phenomena of electrochemical systems, current and potential distributions, double layer theory, electrochemical processes, power sources, synthesis, corrosion. (CHEN 3370, CHEN 3620, and CHEN 3700 require a grade of C or better).

CHEN 5650 HAZARDOUS MATERIALS MANAGEMENT AND ENGINEERING (3) LEC. 3. Pr., (CHEM 2030 or CHEM 2080) and (CHEM 3820 or CIVL 5210). Fundamental principles and regulatory information related to hazardous material and process safety management and engineering, dispersion of chemicals, hazard and operability analysis, chemical engineering principles for risk education.

CHEN 5660 MACROSCALE ASSEMBLY AND APPLICATIONS OF NANOMATERIALS (3) LEC. 3. Production of macroscopic assemblies and structures from nanomaterials. Processing and applications of inorganic, organic, biological and hybrid nanomaterials. Departmental approval.

CHEN 5670 POLLUTION PREVENTION ENGINEERING (3) LEC. 3. Pr., CHEM 2080 and CHEN 3370 and CHEN 3620 and CHEN 3660 and CHEN 3700. Chemical and engineering principles applied to pollution prevention. Theory and practice of basic separation methods, reaction engineering, process controls, and other fundamental chemical engineering disciplines as well as regulatory requirements to prevent unnecessary waste generation. Case studies. (CHEN 3370, CHEN 3620, CHEN 3660, and CHEN 3700 require a grade of C or better).

CHEN 5700 ADVANCED SEPARATION PROCESSES (3) LEC. 3. Pr., CHEN 3370 and CHEN 3660. Advanced treatment of modern chemical engineering separation processes. Theory and practice of staged multi-component mass transfer operations, non-ideal multi-phase separations and continuous rate processes. (CHEN 3370 and CHEN 3660 require a grade of C or better).

CHEN 5800 BIOCHEMICAL ENGINEERING (3) LEC. 3. Pr., CHEN 3700. Bioreactor design. Analysis of enzyme and microbial processes. (CHEN 3700 requires a grade of C or better).

CHEN 5810 BIOMEDICAL ENGINEERING (3) LEC. 3. Pr., CHEM 2080 and CHEN 3620 and CHEN 3700. Application of chemical engineering principles to the study of medical physiology. Human biochemistry, anatomy and physiology, rheological properties of blood and synovial fluid, rheology of cell membranes. Biomedical fluid mechanics and heat and mass transfer. (CHEN 3620 and CHEN 3700 require a grade of C or better).

CHEN 5820 ADVANCED TOPICS IN ENVIRONMENTAL BIOTECHNOLOGY (3) LEC. 3. Application of biotechnology to environmental process treatment, bioremediation and bioreactor development.

CHEN 5970 ADVANCED SPECIAL TOPICS IN CHEMICAL ENGINEERING (1-6) LEC. Topical courses in areas for advanced undergraduate and graduate students. Topics must be arranged with instructor during preregistration. Departmental approval. Course may be repeated for a maximum of 24 credit hours.

CHEN 6110 PULP AND PAPER ENGINEERING (3) LEC. 3. Chemical and engineering principles in the manufacturing of pulp and paper.

CHEN 6120/6126 SURFACE AND COLLOID SCIENCE (3) LEC. 3. Fundamentals of surface and colloid science with applications in pulping and papermaking, including sizing, retention and drainage, charge measurements, dry/wet strength additives, fillers, colorants, foams, pitch and deposits.

CHEN 6400/6406 MOLECULAR ENGINEERING (3) LEC. 3. Introduction to how molecular structure and long range microstructure affect the properties of chemical engineering products and how this knowledge can be used to design chemical engineering products for specific applications.

CHEN 6410/6416 MACROMOLECULAR SCIENCE AND ENGINEERING (3) LEC. 3. Statistical mechanics of chain molecules; thermodynamics of polymer solutions; dilute, semi-dilute, and concentrated solutions and gels; polymer physics; scaling concepts in polymer physics; reptation theory (deGennes, Doi, Edwards) and molecular dynamics; phase separations; crystallization of polymers; rubber elasticity theory; mechanical analysis; viscoelasticity; diffusion theory of polymers; surface properties of polymers.

CHEN 6420/6426 POLYMER CHEMICAL ENGINEERING (3) LEC. 3. Polymer rheology, transport phenomena, thermodynamics, membranes, conducting polymers, surfaces, interfaces and processing.

CHEN 6430/6436 BUSINESS ASPECTS OF CHEMICAL ENGINEERING (3) LEC. 3. The procession of activities required to successfully commercialize and market new chemical-engineering-based technologies to the consumer and process industries. Departmental approval.

CHEN 6440/6446 ELECTROCHEMICAL ENGINEERING (3) LEC. 3. Thermodynamics, electrode kinetics and transport phenomena of electrochemical systems, current and potential distributions, double layer theory, electrochemical processes, power sources, synthesis, corrosion.

CHEN 6650/6656 HAZARDOUS MATERIALS MANAGEMENT AND ENGINEERING (3) LEC. 3. Fundamental principles and regulatory information related to hazardous material and process safety management and engineering, dispersion of chemicals, hazard and operability analysis, chemical engineering, principles for risk education.

CHEN 6660/6666 MACROSCALE ASSEMBLY AND APPLICATIONS OF NANOMATERIALS (3) LEC. 3. Production of macroscopic assemblies and structures from nanomaterials. Processing and applications of inorganic, organic, biological and hybrid nanomaterials. Or departmental approval. May count either CHEN 6660 or CHEN 6666.

CHEN 6670/6676 POLLUTION PREVENTION ENGINEERING (3) LEC. 3. Chemical and engineering principles applied to pollution prevention. Theory and practice of flotation, coalescence, micro- and ultra-filtration, de-emulsification, polymer coagulation and other methods. Case studies.

CHEN 6700/6706 ADVANCED SEPARATION PROCESSES (3) LEC. 3. Advanced treatment of modern chemical engineering separation processes. Theory and practice of staged multi- component mass transfer operations, non-ideal multi-phase separations and continuous rate processes.

CHEN 6800/6806 BIOCHEMICAL ENGINEERING (3) LEC. 3. Bioreactor design. Analysis of enzyme and microbial processes.

CHEN 6810/6816 BIOMEDICAL ENGINEERING (3) LEC. 3. Application of chemical engineering principles to the study of medical physiology. Human biochemistry, anatomy, and physiology, rheological properties of blood and synovial fluid, rheology of cell membranes. Biomedical fluid mechanics and heat and mass transfer.

CHEN 6820/6826 ADVANCED TOPICS IN ENVIRONMENTAL BIOTECHNOLOGY (3) LEC. 3. Application of biotechnology to environmental process treatment, bioremediation and bioreactor development. Departmental approval.

CHEN 6970/6976 ADVANCED SPECIAL TOPICS IN CHEMICAL ENGINEERING (1-6) LEC. Topical courses in areas for advanced undergraduate and graduate students. Topics must be arranged with instructor during preregistration. Departmental approval. Course may be repeated for a maximum of 24 credit hours.

CHEN 7020/7026 INTERFACIAL PHENOMENA (3) LEC. 3. Pr., CHEN 7200 or CHEN 7206. Fundamental analyses of interfacial phenomena at liquid/gas, liquid/liquid and solid/liquid interfaces.

CHEN 7100/7106 TRANSPORT PHENOMENA (3) LEC. 3. Principles of heat, mass and momentum transport in application of intermediate complexity. Mathematical analysis of transport problems.

CHEN 7110/7116 CHEMICAL ENGINEERING ANALYSIS AND ADVANCED TRANSPORT PHENOMENA (3) LEC. 3. Pr., CHEN 7100 or CHEN 7106. Analytical solutions of ordinary and partial differential equations pertaining to transport phenomena and other areas of chemical engineering.

CHEN 7120/7126 ADVANCED TOPICS IN PAPER PROCESSING OPERATIONS (3) LEC. 3. Pr., CHEN 6120 or CHEN 6126. Surface and colloidal interactions in the wet end of paper manufacturing. Colloidal stability theory, absorption of macromolecules, flocculation and retention of particles. Wet-end chemistry process control.

CHEN 7130/7136 ADVANCED PULP AND PAPER ENGINEERING (3) LEC. 3. Topics in pulping, chemical recovery and papermaking.

CHEN 7200/7206 CHEMICAL ENGINEERING THERMODYNAMICS (3) LEC. 3. Chemical reaction and phase equilibrium applied to chemical engineering problems. Properties of multicomponent real gases, liquids, and solids and property relationships. Criteria for thermodynamic equilibrium and stability, molecular thermodynamics.

CHEN 7250/7256 CHEMICAL REACTION ENGINEERING (3) LEC. 3. Pr., P/C, CHEN 7100. Analysis and design of homogeneous and heterogeneous chemical reactors. Physicochemical factors and analysis of non-ideal chemical reactor behavior.

CHEN 7600/7606 ENVIRONMENTAL TRANSPORT (3) LEC. 3. Pr., (CHEN 7100 or CHEN 7106) and (CHEN 7200 or CHEN 7206) and P/C, CHEN 7110. Environmental chemodynamics, interphase equilibrium, reactions, boundary layers, transport mechanisms and models or movement of substances across natural interfaces (air-water-sediment-soil).

CHEN 7710 INTRODUCTION TO RESEARCH SEMINAR (1) LEC. 1. SU. Pr., P/C, CHEN 7100. Introductory graduate research seminars for entering graduate students.

CHEN 7720 ADVANCED PROCESS DESIGN SEMINAR (1) LEC. 1. Pr., P/C, CHEN 7100 and P/C, CHEN 7200. Fundamentals of advanced process design including process synthesis, simulation, analysis, optimization and integration. Systematic process synthesis tools for screening potential flow sheets.

CHEN 7900/7906 INDEPENDENT STUDY (1-10) IND. SU. Supervised study in specialized areas of chemical engineering. Topic must be arranged with instructor during pre-registration. Departmental approval. Course may be repeated for a maximum of 20 credit hours.

CHEN 7950 GRADUATE SEMINAR (1) SEM. 1. SU. Seminar. Course may be repeated for a maximum of 12 credit hours.

CHEN 7970/7976 ADVANCED SPECIAL TOPICS IN CHEMICAL ENGINEERING (1-6) IND. Topical courses for graduate students. Topics must be arranged with instructor during preregistration. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

CHEN 7990 RESEARCH AND THESIS (1-20) MST. Credit hours to be arranged.

CHEN 8000/8006 GRADUATE CHEMICAL ENGINEERING ANALYSIS (2) LEC. 2. Pr., CHEN 7100. Applications of advanced numerical methods to the analysis of complex chemical engineering problems.

CHEN 8010 ADVANCED CHEMICAL ENGINEERING NUMERICAL ANALYSIS (2) LEC. 2. Pr., CHEN 7100 or CHEN 7106. Advanced numerical methods for the analysis of chemical engineering problems. Computer applications.

CHEN 8020 ADVANCED TOPICS IN THE CHARACTERIZATION OF SURFACE PROPERTIES OF MATERIALS (3) LEC. 3. Pr., CHEN 7200 or CHEN 7206. Nature of surface and intermolecular forces. Surface chemical characterization of solid surfaces. Adhesion and the role of chemical, physical and mechanical properties of solid surfaces. Modern characterization techniques including scanning probe microscopy, thermodynamic and spectroscopic methods.

CHEN 8100 ADVANCED TOPICS IN CHEMICAL ENGINEERING PROCESSES (3) LEC. 3. Pr., CHEN 7110 or CHEN 7116. Advanced concepts in fluid dynamics with special emphasis on applications to chemical engineering, creeping flow, multiphase instabilities, computational fluid mechanics and turbulence.

CHEN 8110 ADVANCED TOPICS IN HEAT AND MASS TRANSFER (3) LEC. 3. Pr., CHEN 7110 or CHEN 7116. Application of transport operations to chemical engineering problems containing physical and chemical rate processes. Chemically reacting boundary layers, heat and mass transfer, eddy diffusion, phase change and separation processes.

CHEN 8210 ADVANCED CHEMICAL ENGINEERING THERMODYNAMICS (3) LEC. 3. Pr., CHEN 7200 or CHEN 7206. Application of advanced thermodynamics to complex chemical engineering problems including advanced models for electrolyte solutions, critical and supercritical phenomena, high pressure equilibrium, non-equilibrium and surface thermodynamics and molecular modeling.

CHEN 8220 POLYMER THERMODYNAMICS (3) LEC. 3. Pr., CHEN 7200 or CHEN 7206. Fundamentals and applications of macromolecular thermodynamics to industrial polymer problems.

CHEN 8230 CHEMICAL ENGINEERING STATISTICAL THERMODYNAMICS (3) LEC. 3. Pr., CHEN 7200 or CHEN 7206. Applications of molecular theory and models to the properties of non-ideal gases and liquids using advanced statistical mechanics and chemical thermodynamics.

CHEN 8270 HETEROGENEOUS CATALYSIS (3) LEC. 3. Pr., CHEN 7200 or CHEN 7206. Advanced concepts, techniques, applications and principles for the use of heterogeneous catalysts in chemical and environmental processes. Departmental approval.

CHEN 8280 SURFACE CHARACTERIZATION/SOLIDS (3) LEC. 3. Pr., CHEN 7200 or CHEN 7206. Advanced concepts and techniques in the physical and chemical characterization of solid surfaces by microscopic, spectroscopic and chemical methods including various photon and/or electron spectroscopies, thermal desorption.

CHEN 8300 PROCESS DYNAMICS AND CONTROL (3) LEC. 3. Pr., CHEN 7100 or CHEN 7106 and P/C, CHEN 7110. Advanced linear and nonlinear chemical process dynamics and control systems.

CHEN 8310 PROCESS DYNAMICS AND CONTROL II (2) LEC. 2. Advanced chemical process dynamics and control.

CHEN 8320 ADVANCED TOPICS IN CHEMICAL PROCESS COMPUTER CONTROL SYSTEMS (3) LEC. 2. LAB. 3. Pr., CHEN 7100 or CHEN 7106. Analysis and design of advanced digital control systems for chemical processes. Introduction to computer communications through dynamic data exchange and peripheral linkage. Experimental application of advanced digital control algorithms to chemical processes.

CHEN 8340/8346 PROCESS MODELING AND SIMULATION (3) LEC. 2. LAB. 3. Advances in computer-aided process synthesis, simulation, analysis and optimization including systematic process integration tools for developing and screening potential flow sheets using advanced process simulators.

CHEM 8990 RESEARCH AND DISSERTATION (1-20) DSR. Credit hours to be arranged.

Chemistry - CHEM

Courses

CHEM 1010 SURVEY OF CHEMISTRY I (3) LEC. 3. Science Core. Survey of important topics from general and organic chemistry. Atomic and bonding theory, chemical reactions and stoichiometry, gas laws, solutions, acids and bases, hydrocarbons, alcohols, ethers and amines.

CHEM 1011 SURVEY OF CHEMISTRY I LABORATORY (1) LAB. 3. Pr., P/C, CHEM 1010. Science Core. Laboratory experiments emphasizing course material in CHEM 1010.

CHEM 1020 SURVEY OF CHEMISTRY II (3) LEC. 3. Pr., CHEM 1010. Science Core. Survey of important topics from organic and biochemistry. Aldehydes and ketones, carboxylic acids, carbohydrates, lipids, proteins, enzymes, extracellular fluids, metabolism, nucleic acids, radioactivity.

CHEM 1021 SURVEY OF CHEMISTRY II LABORATORY (1) LAB. 3. Pr., P/C, CHEM 1020 and CHEM 1011. Science Core. Laboratory experiments emphasizing course material in CHEM 1020.

CHEM 1030 FUNDAMENTALS CHEMISTRY I (3) LEC. 3. Science Core. Atomic and molecular theory, chemical equations, stoichiometry, gas laws, thermochemistry, bonding, electronic structure, molecular geometries, solids, liquids, properties of solutions, problem-solving techniques. Credit will not be given for both CHEM 1030 and CHEM 1110 or CHEM 1117.

CHEM 1031 FUNDAMENTAL CHEMISTRY I LABORATORY (1) LAB. 3. Pr., P/C, CHEM 1030. Science Core. Laboratory experiments emphasizing course material in CHEM 1030. Credit will not be given for both CHEM 1031 and CHEM 1111 or CHEM 1118.

CHEM 1040 FUNDAMENTAL CHEMISTRY II (3) LEC. 3. Pr., CHEM 1030 or CHEM 1110 or CHEM 1117. Science Core. Chemical kinetics; chemical equilibrium; acids and bases; calculations of pH; equilibrium constants and thermodynamical properties; electrochemistry; descriptive chemistry. Credit will not be given for both CHEM 1040 and CHEM 1120 or CHEM 1127.

CHEM 1041 FUNDAMENTAL CHEMISTRY II LABORATORY (1) LAB. 3. Pr., P/C, CHEM 1040 or (CHEM 1031 or CHEM 1111 or CHEM 1118). Science Core. Laboratory experiments emphasizing course material in CHEM 1040. Credit will not be given for both CHEM 1041 and CHEM 1121 or CHEM 1128.

CHEM 1110 GENERAL CHEMISTRY I (3) LEC. 3. Pr., P/C, MATH 1610 or P/C, MATH 1617. Science Core. Chemical principles for chemistry and related majors. Atomic and molecular theory, periodicity, chemical reactions, Stoichiometry, gases, thermochemistry, bonding, molecular geometries, liquids, solids, and solutions. Credit will not be given for both CHEM 1110 and CHEM 1030 or CHEM 1117.

CHEM 1111 GENERAL CHEMISTRY I LABORATORY (1) LAB. 3. Pr., P/C, CHEM 1110. Science Core. Laboratory experiments emphasizing course material in CHEM 1110. Credit will not be given for both CHEM 1111 and CHEM 1031 or CHEM 1118.

CHEM 1117 HONORS GENERAL CHEMISTRY I (3) LEC. 3. Pr., Honors College. Science Core. General chemistry for students in the honors program. Topics similar to CHEM 1110, but covered in more depth. Credit will not be given for both CHEM 1117 and CHEM 1030 or CHEM 1110.

CHEM 1118 HONORS GENERAL CHEMISTRY I LABORATORY (1) LAB. 3. Pr., Honors College. CHEM 1117. Science Core. Laboratory experiments emphasizing course material in CHEM 1117. Credit will not be given for both CHEM 1118 and CHEM 1031 or CHEM 1111.

CHEM 1120 GENERAL CHEMISTRY FOR SCIENTISTS AND ENGINEERS II (3) LEC. 3. Pr., CHEM 1110 or CHEM 1117. Science Core. Continuation of CHEM 1110. Chemical kinetics, chemical equilibrium, acids and bases, thermodynamics, electrochemistry, representative element and transition metal chemistry. Credit will not be given for both CHEM 1120 and CHEM 1040 or CHEM 1127.

CHEM 1121 GENERAL CHEMISTRY II LABORATORY (1) LAB. 3. Pr., P/C, CHEM 1120 and CHEM 1111. Science Core. Laboratory experiments emphasizing course material in CHEM 1120. Credit will not be given for both CHEM 1121 and CHEM 1041 or CHEM 1128.

CHEM 1127 HONORS GENERAL CHEMISTRY II (3) LEC. 3. Pr., Honors College. CHEM 1117.Science Core. General chemistry for students in the honors program. Topics similar to CHEM 1120, but covered in more depth. Credit will not be given for both CHEM 1127 and CHEM 1040 or CHEM 1120.

CHEM 1128 HONORS GENERAL CHEMISTRY II LABORATORY (1) LAB. 3. Pr., Honors College. CHEM 1118 and CHEM 1127.Science Core. Laboratory experiments emphasizing course material in CHEM 1127. Credit will not be given for both CHEM 1128 and CHEM 1041 or CHEM 1121.

CHEM 2030 SURVEY OF ORGANIC CHEMISTRY (3) LEC. 3. Pr., CHEM 1040 or CHEM 1120 or CHEM 1127.Structure, nomenclature and reactions of the functional group classes of organic compounds polymers, and molecules of biological interest. Credit will not be given for both CHEM 2030 and CHEM 2070.

CHEM 2070 ORGANIC CHEMISTRY I (3) LEC. 3. Pr., CHEM 1040 or CHEM 1120 or CHEM 1127.In-depth study of organic chemistry including structure, nomenclature, reactions, reaction mechanisms, stereochemistry, synthesis and spectroscopic structure determination organized by the functional group approach. Considers alkanes, alkenes, alkynes, alkyl halides, alcohols, ethers, and aromatic compounds. Credit will not be given for both CHEM 2070 and CHEM 2030.

CHEM 2071 ORGANIC CHEMISTRY I LABORATORY (1) LAB. 3. Pr., P/C, CHEM 2070 and (CHEM 1041 or CHEM 1128 or CHEM 1121).Laboratory for CHEM 2070.

CHEM 2077 HONORS ORGANIC CHEMISTRY I (3) LEC. 3. Pr., Honors College.Organic chemistry for students in the honors program and Chemistry & Biochemistry majors. Topics similar to CHEM 2070, but covered in more depth. Additional credit will not be given for CHEM 2070. Member of the Honors College or CHEM 1110 with grade of A or B or CHEM 1040 with grade of A.

CHEM 2078 HONORS ORGANIC CHEMISTRY I LABORATORY (1) LAB. 3. Pr., P/C, CHEM 2077.Laboratory experiments emphasizing course material in CHEM 2077. Additional credit will not be given for CHEM 2071. Course may be repeated for a maximum of 3 credit hours.

CHEM 2080 ORGANIC CHEMISTRY II (3) LEC. 3. Pr., CHEM 2070.Continuation of CHEM 2070. Aldehydes, ketones, amines, carboxylic acids, esters, amides, anhydrides, polymers, carbohydrates and amino acids.

CHEM 2081 ORGANIC CHEMISTRY II LABORATORY (1) LAB. 3. Pr., CHEM 2071 and P/C, CHEM 2080.Laboratory for CHEM 2080.

CHEM 2087 HONORS ORGANIC CHEMISTRY II (3) LEC. 3. Pr., Honors College.Organic chemistry for students in the honors program and Chemistry & Biochemistry majors. Topics similar to CHEM 2080, but covered in more depth. Additional credit will not be given for CHEM 2080. Member of the Honors College or CHEM 2077 or departmental approval.

CHEM 2088 HONORS ORGANIC CHEMISTRY II LABORATORY (1) LAB. 3. Pr., P/C, CHEM 2087.Laboratory experiments emphasizing course material in CHEM 2087. Additional credit will not be given for CHEM 2081. May count either CHEM 2081 or CHEM 2088. Course may be repeated for a maximum of 3 credit hours.

CHEM 2980 INTRODUCTION TO UNDERGRADUATE RESEARCH IN CHEMISTRY (1-3) LAB. SU. Individual problems course. Students will work under the direction of a staff member on some problem of mutual interest. Departmental approval required. Only Freshman or Sophomore. Course may be repeated for a maximum of 6 credit hours.

CHEM 3000 CHEMICAL LITERATURE (1) LEC. 1. Pr., CHEM 2080.Chemical literature with emphasis on primary and secondary sources and the various computer data bases available.

CHEM 3050 ANALYTICAL CHEMISTRY (3) LEC. 3. Pr., CHEM 1040 or CHEM 1120 or CHEM 1127.Theory and application of volumetric, potentiometric and photometric chemical analysis.

CHEM 3051 ANALYTICAL CHEMISTRY LABORATORY (1) LAB. 3. Pr., P/C, CHEM 3050.Analytical techniques applied to chemical analysis.

CHEM 3160 SURVEY OF PHYSICAL CHEMISTRY (3) LEC. 3. Pr., CHEM 1040 or (CHEM 1120 or CHEM 1127).The principles of physical chemistry.

CHEM 4070 PHYSICAL CHEMISTRY I (3) LEC. 3. Pr., CHEM 1040 or (CHEM 1120 or CHEM 1127) and MATH 2630 and MATH 2650 and PHYS 1610.Principles of chemical thermodynamics, principles of application to problems of chemical interest.

CHEM 4071 PHYSICAL CHEMISTRY I LABORATORY (1) LAB. 3. Pr., P/C, CHEM 4070.

CHEM 4080 PHYSICAL CHEMISTRY II (3) LEC. 3. Pr., CHEM 1040 or (CHEM 1120 or CHEM 1127) and MATH 2630 and MATH 2650 and PHYS 1610. Principles of quantum mechanics and spectroscopy; application in molecular structure and in statistical thermodynamics.

CHEM 4081 PHYSICAL CHEMISTRY II LABORATORY (1) LAB. 3. Pr., P/C, CHEM 4080. Laboratory for CHEM 4080.

CHEM 4100 INORGANIC CHEMISTRY (3) LEC. 3. Pr., CHEM 4080 or CHEM 3160. Principles of inorganic chemistry emphasizing periodic properties, bonding, structure and symmetry, the solid state, acid-base theory and coordination chemistry.

CHEM 4101 INORGANIC CHEMISTRY LABORATORY (1) LAB. 3. Pr., P/C, CHEM 4100. Synthesis and characterization of a variety of inorganic compounds.

CHEM 4110 INORGANIC CHEMISTRY II (3) LEC. 3. Pr., CHEM 4100. Survey of main group, transition metal and organometallic chemistry. Departmental approval.

CHEM 4111 INORGANIC CHEMISTRY LABORATORY II (1) LAB. 3. Pr., CHEM 4101 and P/C, CHEM 4110. Laboratory for CHEM 4110.

CHEM 4130 INSTRUMENTAL ANALYSIS (3) LEC. 3. Pr., CHEM 4080 or CHEM 3160. Fundamental concepts used in instrumental analytical chemistry emphasizing spectrophotometric, electroanalytical and chromatographic analysis.

CHEM 4131 INSTRUMENTAL ANALYSIS LABORATORY (1) LAB. 3. Pr., P/C, CHEM 4130. Laboratory for CHEM 4130.

CHEM 4950 UNDERGRADUATE SEMINAR (1) LEC. 1. Oral presentation and discussion of research in the area of specialization.

CHEM 4980 UNDERGRADUATE RESEARCH IN CHEMISTRY (3) LAB. 9. This is an individual problem course. Each student will work under the direction of a staff member on some problem of mutual interest. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

CHEM 4997 HONORS THESIS (1-3) LEC. 3. Pr., Honors College. Honors College Members Only; Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CHEM 5180 BIOCHEMISTRY I (3) LEC. 3. Pr., CHEM 2080. Molecular Structure: classification, structure and reactions of the major constituents of living matter. Also includes binding phenomena and bioenergetics. Credit will not be given for both CHEM 5180 and BCHE 5180.

CHEM 5181 BIOCHEMISTRY I LABORATORY (1) LEC. 3. Pr., P/C, CHEM 5180 or P/C, BCHE 5180. Identification and quantification of compounds from the important biochemical classes. Examples include amino acid chromatography, dipeptide sequencing, glucose concentration etc. Credit will not be given for both CHEM 5181 and BCHE 5181.

CHEM 5190 BIOCHEMISTRY II (3) LEC. 3. Pr., CHEM 5180. Metabolism: survey of design and regulation of the major catabolic and biosynthetic (including photosynthesis) metabolic pathways. An overview of the flow of genetic information. Credit will not be given for both CHEM 5190 and BCHE 5190.

CHEM 5191 BIOCHEMISTRY II LABORATORY (1) LEC. 3. Pr., P/C, CHEM 5190 or P/C, BCHE 5190. Partial purification, Kinetic studies and characterization of enzymes and nucleotides from various plants, animals and bacteria. Credit will not be given for both CHEM 5191 and BCHE 5191.

CHEM 5280 COMPUTATIONAL CHEMISTRY (4) LEC. 3. LAB. 3. Pr., CHEM 2080 and CHEM 4080. Modern computational chemistry including molecular mechanics and quantum mechanical calculations.

CHEM 6180 BIOCHEMISTRY I (3) LEC. 3. Pr., CHEM 2080. Molecular Structure: classification, structure and reactions of the major constituents of living matter. Also includes binding phenomena and bioenergetics. Credit will not be given for both CHEM 6180 and BCHE 6180.

CHEM 6190 BIOCHEMISTRY II (3) LEC. 3. Pr., CHEM 6180. Metabolism: survey of design and regulation of the major catabolic and biosynthetic (including photosynthesis) metabolic pathways. An overview of the flow of genetic information. Credit will not be given for both CHEM 6190 and BCHE 6190. Departmental approval.

CHEM 6280 COMPUTATIONAL CHEMISTRY (4) LEC. 3. LAB. 3. Pr., CHEM 2080 and CHEM 4080. Modern computational chemistry including molecular mechanics and quantum mechanical calculations.

CHEM 7100 ADVANCED INORGANIC CHEMISTRY (3) LEC. 3. Current concepts of inorganic chemistry with an emphasis on theory, structure, bonding and reactivity. Departmental approval.

CHEM 7110 PHYSICAL METHODS IN INORGANIC CHEMISTRY (3) LEC. 3. Pr., CHEM 7100.Or equivalent. Theory and application of techniques for obtaining information inorganic compounds including magnetism, multinuclear nmr, mass spectrometry, x-ray diffraction, vibrational and electronic spectroscopies.

CHEM 7120 ORGANOMETALLIC CHEMISTRY (3) LEC. 3. Pr., CHEM 7100.Main group and transition metal organometallic chemistry. Departmental approval.

CHEM 7160 ADVANCED TOPICS IN INORGANIC CHEMISTRY (3) LEC. 3. Pr., CHEM 7100.Currently active research areas in inorganic chemistry. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

CHEM 7200 ADVANCED ORGANIC CHEMISTRY I (3) LEC. 3. Structure and mechanism in organic chemistry. Departmental approval.

CHEM 7210 ADVANCED ORGANIC CHEMISTRY II (3) LEC. 3. Pr., CHEM 7200.Physical organic chemistry including spectroscopic methods.

CHEM 7220 ADVANCED ORGANIC CHEMISTRY III (3) LEC. 3. Pr., CHEM 7200.Current synthetic methods of organic chemistry.

CHEM 7260 SPECIAL TOPICS IN ORGANIC CHEMISTRY (1-3) LEC. Pr., CHEM 7200.Advanced course in a research area in organic chemistry which is of mutual interest to graduate students and the instructor. Course may be repeated for a maximum of 6 credit hours.

CHEM 7300 ADVANCED PHYSICAL CHEMISTRY (3) LEC. 3. Topics of general and current interest; may vary from year to year.

CHEM 7330 CHEMICAL KINETICS (3) LEC. 3. Theoretical and experimental aspects of reaction rates. The mathematics and characterization of chemically reacting systems.

CHEM 7350 QUANTUM AND STATISTICAL MECHANICS (3) LEC. 3. Pr., CHEM 7300.A quantum mechanical and statistical approach to molecular structure and chemistry.

CHEM 7370 SPECIAL TOPICS IN PHYSICAL CHEMISTRY (1-3) LEC. 3. Pr., CHEM 7300.Modern topics in advanced physical chemistry. Course may be repeated for a maximum of 3 credit hours.

CHEM 7380 MOLECULAR SPECTROSCOPY (3) LEC. 3. Pr., CHEM 7300.Theory and application of optical and magnetic resonance spectroscopy.

CHEM 7500 ADVANCED ANALYTICAL CHEMISTRY (3) LEC. 3. Analytical principles, applications and methods, mathematical interpretations and current developments.

CHEM 7510 ELECTROANALYTICAL CHEMISTRY (3) LEC. 3. Pr., CHEM 7500.Analytical applications of electrochemistry.

CHEM 7520 SURFACE CHEMISTRY (3) LEC. 3. Pr., CHEM 7500.Basic concepts in surface chemistry and surface analytical methods.

CHEM 7530 ADVANCES IN BIOANALYTICAL CHEMISTRY (3) LEC. 3. Pr., CHEM 7500.Analytical Chemistry of microfluidic devices and "Lab on a chip." New methods of miniaturization of separations and analysis with emphasis on bioanalytical applications.

CHEM 7750 FORMAL PRESENTATIONS IN MODERN CHEMISTRY (1) LEC. 1. Oral presentations skills will be developed with a focus on the dissemination of new discoveries in the field of Chemistry. Course may be repeated for a maximum of 6 credit hours.

CHEM 7930 DIRECTED INDIVIDUAL STUDY (1-15) IND. Credit to be arranged. Course may be repeated for a maximum of 15 credit hours.

CHEM 7950 SEMINAR (1) SEM. 1. SU. Course may be repeated for a maximum of 6 credit hours.

CHEM 7990 RESEARCH AND THESIS (1-10) MST. Course may be repeated with change in topics.

CHEM 8990 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with change in topics.

Civil Engineering - CIVL

Courses

CIVL 2010 SURVEYING (3) LEC. 2. LAB. 3. Pr., ENGR 1110 and (MATH 1610 or MATH 1617) and COMP 1200. Civil engineering surveying theory and practice including history of land surveys and U.S. datums; field measurements, office calculations and graphical/digital presentation of spatial data.

CIVL 3010 CIVIL ENGINEERING ANALYSIS (4) LEC. 3. LAB. 3. Pr., MATH 2650 and COMP 1200 and ENGR 2050. Applications of calculus and ordinary differential equations, numerical methods, vector algebra, and linear algebraic expressions to practical civil engineering problems. Heavy emphasis on computerized techniques and civil engineering software.

CIVL 3110 HYDRAULICS (4) LEC. 3. LAB. 3. Pr., (ENGR 2010 or ENGR 2200) and MATH 2650 and P/C, ENGR 2350 and P/C, CIVL 3010. Pr. ENGR 2010 is only allowed for students who transfer into Civil Engineering. Students already enrolled in Civil Engineering should take ENGR 2200. Introduction to fluid mechanics, fluid properties, hydrostatics, kinematics, dynamics, energy equation, ideal flow and energy losses. Applications of fluid mechanics, pipe flow, fluid measurements, pumps, open channel flow, dimensional analysis and theory of modeling.

CIVL 3220 WATER AND WASTE TREATMENT (4) LEC. 3. LAB. 3. Pr., CHEM 1040 and BIOL 3200. Fundamentals of potable water treatment and wastewater treatment and disposal. Treatment systems; operation/ process physics, chemistry, and biology; operation and maintenance issues; regulatory requirements. Credit will not be given to students majoring in Civil Engineering.

CIVL 3230 ENVIRONMENTAL ENGINEERING (4) LEC. 3. LAB. 3. Pr., CHEM 1040 and MATH 2650 and (P/C, CIVL 3010 and P/C, CIVL 3110 or P/C, BSEN 3310). Fundamental principles of environmental engineering, including basic environmental chemistry and microbiology; materials and energy balances; diffusion; chemical equilibrium; kinetics; and chemical reaction engineering.

CIVL 3310 GEOTECHNICAL ENGINEERING I (4) LEC. 3. LAB. 3. Pr., CHEM 1040 and ENGR 2070. Soil-forming processes, physical properties of soils, subsurface investigations, clay mineralogy, soil classification, permeability, effective stress, consolidation theory, time-settlement analysis, compaction, shear strength, geosynthetics.

CIVL 3410 CONSTRUCTION ENGINEERING (3) LEC. 3. Pr., Junior standing. Basic concepts of the construction industry, contractual methods, estimating and scheduling.

CIVL 3510 TRANSPORTATION ENGINEERING (4) LEC. 4. Pr., CIVL 2010. Introduction to transportation engineering practice with emphasis on highway facility design, traffic operations, and life-cycle costing.

CIVL 3610 STRUCTURAL ANALYSIS (4) LEC. 3. LAB. 3. Pr., ENGR 2070 and P/C, CIVL 3010. Basic structural analysis of determinate and indeterminate structures, deflections by moment-area and virtual work, influence lines, force method and moment-distribution methods of analysis.

CIVL 3820 CIVIL ENGINEERING MATERIALS (3) LEC. 2. LAB. 3. Pr., CIVL 3310. Introduction to common materials used in construction of civil facilities including highways; aggregate, concrete, asphalt, and steel.

CIVL 4210 WATER AND WASTEWATER TREATMENT AND DESIGN (3) LEC. 3. Pr., CIVL 3230. The fundamentals of theory, design, and operation of water and wastewater treatment systems are covered. Departmental approval.

CIVL 4211 WATER AND WASTEWATER LABORATORY (1) LAB. 3. Pr., CHEM 1040 and BIOL 3200. Coreq., CIVL 4210. Introduction to analytical techniques used to assess water quality. Credit will not be given to students majoring in Civil Engineering.

CIVL 4220 ENVIRONMENTAL ENGINEERING DESIGN (3) LEC. 3. Pr., CIVL 4210 or CIVL 4230. Process design of environmental engineering systems.

CIVL 4230 URBAN HYDRAULIC SYSTEM DESIGN (3) LEC. 3. Pr., CIVL 3230 and CIVL 3110. Engineering approaches to designing and managing urban water supply, sanitary sewer, storm water collection systems and flood control works.

CIVL 4310 GEOTECHNICAL ENGINEERING II (3) LEC. 3. Pr., CIVL 3310. Analysis and design in geotechnical engineering based on principles of soil mechanics and soil behavior. Problems of slope stability, earth pressure and design of earth retaining structures, foundation bearing capacity and settlement.

CIVL 4420 PROJECT MANAGEMENT (3) LEC. 3. Pr., CIVL 3410. Planning and management of construction/engineering projects and organizations, project management techniques, skills, and applications.

CIVL 4490 DESIGN-BUILD PROJECT (3) LEC. 3. Pr., CIVL 4420. Develop a design-build proposal for a civil engineering improvement including engineering study, consideration of alternative designs, and formal written and oral presentation.

CIVL 4500 TRAFFIC ENGINEERING FUNDAMENTALS (3) LEC. 3. Pr., CIVL 3510. The fundamental elements of traffic engineering including traffic operations and traffic control devices.

CIVL 4520 AIRPORT DESIGN (3) LEC. 3. Pr., CIVL 3510. An analysis of the elements affecting the design of airports including forecasting, runway configuration, capacity analyses, geometric design of runways and taxiways, pavement design and airfield drainage. Departmental approval.

CIVL 4530 GEOMETRIC DESIGN (3) LEC. 3. Pr., CIVL 3510. An analysis of the elements affecting the location and design of rural highways, urban highways and arterial streets including design controls and criteria.

CIVL 4590 TRANSPORTATION DESIGN PROJECT (3) LEC. 3. Pr., ENGR 1110 and CIVL 3510. Individual senior design project requiring the development of plans for a roadway over a large land segment: horizontal and vertical curves in accord with State and AASHTO standards; topographic terrain features; historical preservation area; minimum elevation; intersection design; earthwork balance.

CIVL 4600 REINFORCED CONCRETE DESIGN (3) LEC. 3. Pr., CIVL 3610. Concrete and reinforcing steel properties; analysis and design of reinforced concrete beams, one-way slabs, columns and footings; anchorage of reinforcement.

CIVL 4650 STRUCTURAL STEEL DESIGN (3) LEC. 3. Pr., CIVL 3610. Steel properties. Design and analysis of structural steel members in tension, compression, shear, flexure and combined compression and flexure. Bolted and welded connections.

CIVL 4690 STRUCTURAL DESIGN PROJECT (3) LEC. 3. Pr., CIVL 4600. Execution of a comprehensive design of a major structure. Emphasis on the design process, creative thinking, analysis, synthesis, teamwork and communications.

CIVL 4960 SPECIAL PROBLEMS (1-3) LEC. Individual student endeavor under staff supervision involving advanced special problems in civil engineering. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CIVL 4997 HONORS THESIS (1-3) IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CIVL 5110 OPEN CHANNEL HYDRAULICS (3) LEC. 3. Pr., CIVL 3110. Application of continuity, energy, and momentum analyses to problems of open channel flow. Topics include rapidly and gradually varied flow, unsteady flow, flood routing, computational methods, design concepts and applications. Credit will not be given for both CIVL 5110 and CIVL 6110/ CIVL 6116.

CIVL 5120 HYDROLOGIC ANALYSIS AND MODELING (3) LEC. 3. Pr., CIVL 3110 and STAT 3010. Hydrologic cycle, hydrologic frequency analysis, precipitation, infiltration, runoff hydrograph, flood routing, urban hydrology, watershed hydrologic modeling, and computer modeling applications. Departmental approval. May count either CIVL 5120 or CIVL 6120.

CIVL 5130 HYDRAULIC DESIGN OF PRESSURIZED SYSTEMS (3) LEC. 3. Pr., CIVL 3110. Pressurized flow applications; pump-pipeline design optimization; multiple reservoir operation; flow measurement/control systems; distribution manifolds; fundamentals of unsteady flows. Departmental approval. May count either CIVL 5130 or CIVL 6130.

CIVL 5150 GROUNDWATER HYDRAULICS (3) LEC. 3. Pr., CIVL 3110. Mechanics of groundwater flow, definitions, conservation of mass, Darcy's law, confined and unconfined flow, steady and transient flow, groundwater transport. Credit will not be given for both CIVL 5150 and CIVL 6150/CIVL 6156.

CIVL 5210 CHEMICAL PRINCIPLES OF ENVIRONMENTAL ENGINEERING (3) LEC. 3. Pr., CIVL 3230. Fundamentals of aquatic chemistry as applied to environmental engineering: chemical thermodynamics, acid/base equilibrium, solution/dissolution chemistry, redox equilibrium, and chemical kinetics. Departmental approval. Credit will not be given for both CIVL 5210 and CIVL 6210/CIVL 6216.

CIVL 5220 ENVIRONMENTAL ENGINEERING PROCESSES LABORATORY (1) LAB. 3. Pr., CIVL 3230. Laboratory exploration of the fundamentals and applications of aquatic chemistry, physical-chemical processes and biological processes, as employed in water and wastewater treatment. Departmental approval. Credit will not be given for both CIVL 5220 and CIVL 6220.

CIVL 5230 ENVIRONMENTAL HEALTH ENGINEERING (3) LEC. 3. Application of engineering methodology in environmental health; communicable disease control, insect and rodent control, solid and hazardous wastes, noise, radiological health, legal and administrative considerations, etc. Departmental approval. Credit will not be given for both CIVL 5230 and CIVL 6230/CIVL 6236.

CIVL 5240 AIR POLLUTION (3) LEC. 3. Nature, sources and effects of air pollutants; effects of atmospheric conditions on dispersion; dispersion modeling, theory and design of control devices; legal/ administrative control. Departmental approval. Credit will not be given for both CIVL 5240 and CIVL 6240/CIVL 6246.

CIVL 5250 BIOLOGICAL PRINCIPLES OF ENVIRONMENTAL ENGINEERING (3) LEC. 3. Pr., CIVL 3230. Fundamentals of aquatic biology and microbiology as applied to environmental engineering: microbial growth, microbial metabolism, microbial population dynamics, wastewater treatment microbiology, environmental impacts, toxicity testing, and biomonitoring. Departmental approval. Credit will not be given for both CIVL 5250 and CIVL 6250/CIVL 6256.

CIVL 5330 LANDFILLS (3) LEC. 3. Pr., CIVL 3310. Landfill siting design, construction and operational practices; regulations, terminology, closure regulations and procedures. Credit will not be given for both CIVL 5330 and CIVL 6330/CIVL 6336.

CIVL 5340 GEOSYNTHETICS AND SOIL IMPROVEMENT (3) LEC. 3. Pr., CIVL 3310. Use of geosynthetics in civil engineering design: reinforcement, retaining walls, filtration, slopes, roads and erosion control. Evaluation and testing of geosynthetics. Improvement of soil properties for civil engineering design: principles and practice of densification, grouting, reinforcement, stone columns, soil nailing. Credit will not be given for both CIVL 5340 and CIVL 6340/CIVL 6346.

CIVL 5350 EARTH RETAINING STRUCTURES (3) LEC. 3. Pr., CIVL 3310. Analysis and design of earth retaining structures. Shear strength; earth pressure theory; gravity, mechanically stabilized, flexible sheet, and anchored structures. May count either CIVL 5350 or CIVL 6350/CIVL 6356.

CIVL 5410 GEOGRAPHIC INFORMATION SYSTEMS IN CIVIL ENGINEERING (3) LEC. 3. Pr., CIVL 2010. Basic principles and the development of geographic information systems and practical experiences in the field of civil engineering. Credit will not be given for both CIVL 5410 and CIVL 6410. Departmental approval.

CIVL 5420 CONSTRUCTION PROJECT SCHEDULING AND CONTROL (3) LEC. 3. Pr., CIVL 3410 and CIVL 4420. Principles related to planning, scheduling and control of civil engineering projects. Deterministic and probabilistic methods of scheduling, resource usage optimization. May count either CIVL 5420 or CIVL 6420.

CIVL 5430 CONSTRUCTION SAFETY AND HEALTH MANAGEMENT (3) LEC. 3. Pr., CIVL 3410. Various causes of construction accidents and adopted strategies for preventing worksite injuries and illness are investigated. Emphasis on OSHA standards, insurance, and health and safety hazards. Credit will not be given for both CIVL 5430 and CIVL 6430/CIVL 6436. Departmental approval.

CIVL 5440 CONSTRUCTION EQUIPMENT AND METHODS (3) LEC. 3. Pr., CIVL 3410 and CIVL 3310 and CIVL 3510. Selection of equipment for heavy construction operations, production rates, owning and operating costs, fleet management. May count either CIVL 5440 or CIVL 6440/CIVL 6446.

CIVL 5450 EROSION & SEDIMENT CONTROL (3) LEC. 3. Pr., CIVL 3310 and CIVL 3410. Process of erosion, sediment transport, and sedimentation along with strategies adopted to prevent and manage erosion on construction sites. May count either CIVL 5450 or CIVL 6450.

CIVL 5460 PROJECT ESTIMATING (3) LEC. 3. Pr., CIVL 3410. Conceptual and definitive estimates, overhead and profit determination; claim change order pricing. May count either CIVL 5460 or CIVL 6460.

CIVL 5480 LEGAL ASPECTS OF CIVIL ENGINEERING PRACTICE (3) LEC. 3. Pr., CIVL 3410. Covered is the law of contracts, agency, association, property, and labor law, studied generally and in the context that the practicing civil engineer encounters them. Departmental approval. May count either CIVL 5480 or CIVL 6480/CIVL 6486.

CIVL 5500 TRAFFIC ENGINEERING ANALYSIS (3) LEC. 3. Pr., CIVL 3510. Capacity analysis of rural and suburban highways, 2-lane highways, freeways, weaving sections, ramps and intersections. May count either CIVL 5500 or CIVL 6500/CIVL 6506.

CIVL 5510 TRAFFIC CONTROL SYSTEMS DESIGN (3) LEC. 3. Pr., CIVL 3510 and STAT 3010. Fundamental design concepts for highway traffic control systems. Control requirements and warrants; hardware operation and equipment selection; development and implementation of timing plans for isolated intersections and intersection networks. May count either CIVL 5510 or CIVL 6510/CIVL 6516.

CIVL 5560 TRANSPORTATION PLANNING (3) LEC. 3. Pr., CIVL 3510 and STAT 3010. The planning process for urban and regional transportation development. Topics include planning objectives and data requirements; planning inventories; modeling of trip-making behavior, development and evaluation of alternate plans; multimodal applications, including railway operations. Departmental approval. May count either CIVL 5560 or CIVL 6560/CIVL 6566.

CIVL 5580 INTELLIGENT TRANSPORTATION SYSTEMS (3) LEC. 3. Pr., CIVL 3510. Introduction to intelligent transportation systems, covering applications of information and communication technologies to transportation, with emphasis on operations of traffic management and traveler information systems. Credit will not be given for both CIVL 5580 and CIVL 6580/CIVL 6586. Departmental approval.

CIVL 5600 ADVANCED REINFORCED CONCRETE DESIGN (3) LEC. 3. Pr., CIVL 4600. Analysis and design of continuous beams and one-way slabs, bond and development length, torsion, slenderness effects in columns, two-way slabs, footings, and retaining walls. May count either CIVL 5600 or CIVL 6600/CIVL 6606.

CIVL 5620 PRESTRESSED CONCRETE DESIGN (3) LEC. 3. Pr., CIVL 4600. Properties and behavior of pre-stressed concrete, pre-stressing systems and end anchorages, analysis and design of beams for flexure and shear, camber and deflection, cable lay-out, pre-stressed concrete slabs. May count either CIVL 5620 or CIVL 6620/CIVL 6626.

CIVL 5630 ADVANCED CONCRETE MATERIALS (3) LEC. 3. Pr., CIVL 3820. Comprehensive coverage of concrete materials. Topics include cement and aggregate properties; concrete microstructure; mechanical properties; supplementary cementing materials; chemical admixtures; durability issues; special concretes. May count either CIVL 5630 or CIVL 6630/CIVL 6636.

CIVL 5640 STRUCTURAL MASONRY DESIGN (3) LEC. 3. Pr., CIVL 4600. Properties of masonry component materials; behavior and design of unreinforced and reinforced masonry assemblages and structures. May count either CIVL 5640 or CIVL 6640/CIVL 6646.

CIVL 5650 ADVANCED STEEL DESIGN (3) LEC. 3. Pr., CIVL 4650. Composite construction, open web joists, torsion, plate girders, plastic analysis and design, highway bridges, computer applications. May count either CIVL 5650 or CIVL 6650/CIVL 6656.

CIVL 5670 ADVANCED STRUCTURAL ANALYSIS (3) LEC. 3. Pr., CIVL 3610. Analysis of continuous beams and frames by slope-deflection method. Analysis of beams, trusses, grids, and frames by direct stiffness method. Buckling of planar frames. Use of structural analysis software. May count either CIVL 5670 or CIVL 6670/CIVL 6676.

CIVL 5690 TIMBER DESIGN (3) LEC. 3. Pr., CIVL 3610. Properties and behavior of timber and plywood; design of timber beams, columns, floor and wall assemblies and wood formwork; timber trusses and laminated arches. May count either CIVL 5690 or CIVL 6690/CIVL 6696.

CIVL 5700 DESIGN FOR LATERAL LOADS (3) LEC. 3. Pr., CIVL 3610 and (CIVL 4600 or CIVL 4650). Wind meteorology and loadings, effects of wind loadings, building code wind pressures and load provisions, fundamentals of structural vibrations, earthquake characteristics and loadings, building code earthquake provisions, building lateral load resisting systems. May count either CIVL 5700 or CIVL 6700/CIVL 6706.

CIVL 5710 STRUCTURAL REPAIR (3) LEC. 3. Pr., CIVL 4600. Evaluation of causes of distress; condition; repair materials; methods of repair; protection methods; and structural strengthening in structural concrete applications. May count either CIVL 5710 or CIVL 6710/CIVL 6716.

CIVL 5810 PAVEMENT DESIGN AND CONSTRUCTION (3) LEC. 3. Pr., CIVL 3820 and CIVL 3310 and CIVL 3510. General concepts, traffic factors, material characterization, layer thickness selection, earthwork, base and sub-base construction, surface course construction, quality control/assurance. May count either CIVL 5810 or CIVL 6810/CIVL 6816.

CIVL 5820 DESIGN AND PRODUCTION OF ASPHALT PAVING MIXTURES (3) LEC. 2. LAB. 3. Pr., CIVL 3820. Selection and optimization of component materials based on physical properties, specification criteria, performance expectations, and costs. Production and quality assurance. May count either CIVL 5820 or CIVL 6820.

CIVL 5970 CIVIL ENGINEERING SPECIAL TOPICS (3) LEC. 3. Special topics of an advanced undergraduate nature pertinent to civil engineering. Specific prerequisites will be announced for each course offering. Credit will not be given for both CIVL 5970 and CIVL 6970. Course may be repeated for a maximum of 6 credit hours.

CIVL 6110/6116 OPEN CHANNEL HYDRAULICS (3) LEC. 3. Pr., CIVL 3110. Application of continuity, energy, and momentum analyses to problems of open channel flow. Topics include rapidly and gradually varied flow, unsteady flow, flood routing, computational methods, design concepts and applications. Credit will not be given for both CIVL 5110 and CIVL 6110/CIVL 6116.

CIVL 6120 HYDROLOGIC ANALYSIS AND MODELING (3) LEC. 3. Pr., CIVL 3110 and STAT 3110. Hydrologic cycle, hydrologic frequency analysis, precipitation, infiltration, runoff hydrograph, flood routing, urban hydrology, watershed hydrologic modeling, and computer modeling applications. Departmental approval.

CIVL 6130 HYDRAULIC DESIGN (3) LEC. 3. Pr., CIVL 3110. Pressurized flow applications; pump-pipeline design optimization; multiple reservoir operation; flow measurement/control systems; distribution manifolds; fundamentals of unsteady flows. Departmental approval. May count either CIVL 5130 or CIVL 6130.

CIVL 6150/6156 GROUNDWATER HYDRAULICS (3) LEC. 3. Pr., CIVL 3110. Mechanics of groundwater flow, definitions, conservation of mass, Darcy's law, confined and unconfined flow, steady and transient flow, groundwater transport. May count either CIVL 5150 or CIVL 6150/CIVL 6156.

CIVL 6210/6216 CHEMICAL PRINCIPLES OF ENVIRONMENTAL ENGINEERING (3) LEC. 3. Pr., CIVL 3230. Fundamentals of aquatic chemistry as applied to environmental engineering: chemical thermodynamics, acid/base equilibrium, solution/dissolution chemistry, redox equilibrium, and chemical kinetics. Departmental approval. Credit will not be given for both CIVL 5210 and CIVL 6210/CIVL 6216.

CIVL 6220 ENVIRONMENTAL ENGINEERING PROCESSES LABORATORY (1) LAB. 3. Pr., CIVL 3230. Laboratory exploration of the fundamentals and applications of aquatic chemistry, physical-chemical processes and biological processes, as employed in water and wastewater treatment. Departmental approval. May count either CIVL 5220 or CIVL 6220.

CIVL 6230/6236 ENVIRONMENTAL HEALTH ENGINEERING (3) LEC. 3. Application of engineering methodology in environmental health; communicable disease control, insect and rodent control, solid and hazardous wastes, noise, radiological health, legal and administrative considerations, etc. Departmental approval. Credit will not be given for both CIVL 5230 and CIVL 6230/CIVL 6236.

CIVL 6240/6246 AIR POLLUTION (3) LEC. 3. Nature, sources and effects of air pollutants; effects of atmospheric conditions on dispersion; dispersion modeling theory and design of control devices; legal/administrative control. Departmental approval. Credit will not be given for both CIVL 5240 and CIVL 6240/CIVL 6246.

CIVL 6250/6256 BIOLOGICAL PRINCIPLES OF ENVIRONMENTAL ENGINEERING (3) LEC. 3. Pr., CIVL 3230. Fundamentals of aquatic biology and microbiology as applied to environmental engineering: microbial growth, microbial metabolism, microbial population dynamics, wastewater treatment microbiology, environmental impacts, toxicity testing, and biomonitoring. Departmental approval. Credit will not be given for both CIVL 5250 and CIVL 6250/CIVL 6256.

CIVL 6330/6336 LANDFILLS (3) LEC. 3. Pr., CIVL 3310. Landfill siting design, construction and operational practices; regulations, terminology, closure regulations and procedures. Credit will not be given for both CIVL 5330 and CIVL 6330/CIVL 6336.

CIVL 6340/6346 GEOSYNTHETICS AND SOIL IMPROVEMENT (3) LEC. 3. Pr., CIVL 3310. Use of geosynthetics in civil engineering design: reinforcement, retaining walls, filtration, slopes, roads and erosion control. Evaluation and testing of geosynthetics. Improvement of soil properties for civil engineering design: principles and practice of densification, grouting, reinforcement, stone columns, soil nailing. Credit will not be given for both CIVL 5340 and CIVL 6340/CIVL 6346.

CIVL 6350/6356 EARTH RETAINING STRUCTURES (3) LEC. 3. Pr., CIVL 3310. Analysis and design of earth retaining structures. Shear strength; earth pressure theory; gravity, mechanically stabilized, flexible sheet, and anchored structures. May count either CIVL 5350 or CIVL 6350/CIVL 6356.

CIVL 6410 GEOGRAPHIC INFORMATION SYSTEMS IN CIVIL ENGINEERING (3) LEC. 3. Pr., CIVL 2010. Basic principles and the development of geographic information systems and practical experiences in the field of civil engineering. Credit will not be given for both CIVL 5410 and CIVL 6410. Departmental approval.

CIVL 6420 CONSTRUCTION PROJECT SCHEDULING AND CONTROL (3) LEC. 3. Pr., CIVL 3410 and CIVL 4420. Principles related to planning, scheduling and control of civil engineering projects. Deterministic and probabilistic methods of scheduling, resource usage optimization. May count either CIVL 5420 or CIVL 6420.

CIVL 6430/6436 CONSTRUCTION SAFETY (3) LEC. 3. Pr., CIVL 3410. Various causes of construction accidents and adopted strategies preventing worksite injuries and illnesses are investigated. Emphasis on OSHA standards, insurance, and health and safety hazards. Credit will not be given for both CIVL 5430 and CIVL 6430/CIVL 6436. Departmental approval.

CIVL 6440/6446 CONSTRUCTION EQUIPMENT AND METHODS (3) LEC. 3. Pr., CIVL 3410 and CIVL 3310 and CIVL 3510. Selection of equipment for heavy construction operations, production rates, owning and operating costs, fleet management. May count either CIVL 5440 or CIVL 6440/CIVL 6446.

CIVL 6450 EROSION AND SEDIMENT CONTROL TECHNOLOGIES IN CONSTRUCTION (3) LEC. 3. Pr., CIVL 3310 and CIVL 3410. Process of erosion, sediment transport, and sedimentation along with strategies adopted to prevent and manage erosion on construction sites. May count either CIVL 5450 or CIVL 6450.

CIVL 6460 PROJECT ESTIMATING (3) LEC. 3. Pr., CIVL 3410. Conceptual and definitive estimates, overhead and profit determination; claim change order pricing. May count either CIVL 5460 or CIVL 6460.

CIVL 6480/6486 LEGAL ASPECTS OF CIVIL ENGINEERING PRACTICE (3) LEC. 3. Pr., CIVL 3410. Covered is the law of contracts, agency, association, property, and labor law, studied generally and in the context that the practicing civil engineer encounters them. Departmental approval. May count either CIVL 5480 or CIVL 6480/CIVL 6486.

CIVL 6500/6506 TRAFFIC ENGINEERING ANALYSIS (3) LEC. 3. Pr., CIVL 3510. Capacity analysis of rural and suburban highways, 2-lane highways, freeways, weaving sections, ramps and intersections. May count either CIVL 5500 or CIVL 6500/CIVL 6506.

CIVL 6510/6516 TRAFFIC CONTROL SYSTEMS DESIGN (3) LEC. 3. Pr., CIVL 3510 and STAT 3010. Fundamental design concepts for highway traffic control systems. Control requirements and warrants: hardware operation and equipment selection; development and implementation of timing plans for isolated intersections and intersection networks. May count either CIVL 5510 or CIVL 6510/CIVL 6516.

CIVL 6560/6566 TRANSPORTATION PLANNING (3) LEC. 3. Pr., CIVL 3510 and STAT 3010. The planning process for urban and regional transportation development. Topics include planning objectives and data requirements; planning inventories; modeling of trip-making behavior, development and evaluation of alternate plans; multimodal applications, including railway operations. Departmental approval. May count either CIVL 5560 or CIVL 6560/CIVL 6566.

CIVL 6580/6586 INTELLIGENT TRANSPORTATION SYSTEMS (3) LEC. 3. Pr., CIVL 3510. Introduction to intelligent transportation systems, covering applications of information and communications technologies to transportation, with emphasis on operations of traffic management and traveler information systems. Departmental approval. May count either CIVL 5580 or CIVL 6580/CIVL 6586.

CIVL 6600/6606 ADVANCED REINFORCED CONCRETE DESIGN (3) LEC. 3. Pr., CIVL 4600. Analysis and design of continuous beams and one-way slabs, bond and development length, torsion, slenderness effects in columns, two-way slabs, footings, and retaining walls. May count either CIVL 5600 or CIVL 6600/CIVL 6606.

CIVL 6620/6626 PRE-STRESSED CONCRETE DESIGN (3) LEC. 3. Pr., CIVL 4600. Properties and behavior of pre-stressed concrete, pre-stressing systems and end anchorages, analysis and design of beams for flexure and shear, camber and deflection, cable layout, pre-stressed concrete slabs. May count either CIVL 5620 or CIVL 6620/CIVL 6626.

CIVL 6630/6636 ADVANCED CONCRETE MATERIALS (3) LEC. 3. Pr., CIVL 3820. Comprehensive coverage of concrete materials. Topics include cement and aggregate properties; concrete microstructure; mechanical properties; supplementary cementing materials, chemical admixtures; durability issues; special concretes. May count either CIVL 5630 or CIVL 6630/CIVL 6636.

CIVL 6640/6646 STRUCTURAL MASONRY DESIGN (3) LEC. 3. Pr., CIVL 4600. Properties of masonry component materials; behavior and design of unreinforced and reinforced masonry assemblages and structures. May count either CIVL 5640 or CIVL 6640/CIVL 6646.

CIVL 6650/6656 ADVANCED STEEL DESIGN (3) LEC. 3. Pr., CIVL 4650. Composite construction, open web joists, torsion, plate girders, plastic analysis and design, highway bridges, computer applications. May count either CIVL 5650 or CIVL 6650/CIVL 6656.

CIVL 6670/6676 ADVANCED STRUCTURAL ANALYSIS (3) LEC. 3. Pr., CIVL 3610. Analysis of continuous beams and frames by slope-deflection method. Analysis of beams, trusses, grids, and frames by direct stiffness method. Buckling of planar frames. Use of structural analysis software. May count either CIVL 5650 or CIVL 6650/CIVL 6656.

CIVL 6690/6696 TIMBER DESIGN (3) LEC. 3. Pr., CIVL 3610. Properties and behavior of timber and plywood; design of timber beams, columns, floor and wall assemblies and wood formwork; timber trusses and laminated arches. May count either CIVL 5690 or CIVL 6690/CIVL 6696.

CIVL 6700/6706 DESIGN FOR LATERAL LOADS (3) LEC. 3. Pr., CIVL 3610 and (CIVL 4600 or CIVL 4650). Wind meteorology and loadings, effects of wind loadings, building code wind pressures and load provisions, fundamentals of structural vibrations, earthquake characteristics and loadings, building code earthquake provisions, building lateral load resisting systems. May count either CIVL 5700 or CIVL 6700/CIVL 6706.

CIVL 6710/6716 STRUCTURAL REPAIR (3) LEC. 3. Pr., CIVL 4600. Evaluation of causes of distress; condition; repair materials; methods of repair; protection methods; and structural strengthening in structural concrete applications. May count either CIVL 5710 or CIVL 6710/CIVL 6716.

CIVL 6810/6816 PAVEMENT DESIGN AND CONSTRUCTION (3) LEC. 3. Pr., CIVL 3820 and CIVL 3310 and CIVL 3510. General concepts, traffic factors, material characterization, layer thickness selection, earthwork, base and sub-base construction, surface course construction quality control/assurance. May count either CIVL 5810 or CIVL 6810/CIVL 6816.

CIVL 6820 DESIGN AND PRODUCTION OF ASPHALT PAVING MIXTURES (3) LEC. 2. LAB. 3. Pr., CIVL 3820. Selection and optimization of component materials based on physical properties, specification criteria, performance expectations, and costs. Production and quality assurance. May count either CIVL 5820 or CIVL 6820.

CIVL 6970 CIVIL ENGINEERING SPECIAL TOPICS (3) LEC. 3. Special topics of an advanced undergraduate nature pertinent to civil engineering. Specific prerequisites will be announced for each course offering. Credit will not be given for both CIVL 5970 and CIVL 6970. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CIVL 7120/7126 HYDROLOGIC MODELING (3) LEC. 3. Pr., (CIVL 6110 or CIVL 6116). Principles and practice of hydrologic modeling, introduction to hydrologic information systems, computer modeling of storm run-off, floodplain hydraulics and bridge hydraulics. Computer applications.

CIVL 7170/7176 NUMERICAL METHODS IN HYDRAULICS AND HYDROLOGY (3) LEC. 3. Pr., CIVL 3230. Numerical approximations of ordinary and partial differential equations representing problems common to civil engineering including groundwater flow, soil consolidation, and mass transport. The formulation and computational solution of diffusion and equilibrium problems are emphasized. Computer programming is required.

CIVL 7210/7216 METHODS OF POLLUTANT ANALYSIS IN ENVIRONMENTAL ENGINEERING (3) LEC. 2. LAB. 3. Pr., CIVL 6210 or CIVL 6216. Fundamentals of identifying and quantifying environmental pollutants: review of pollutant chemistry, quality and quantity of pollutants, statistical basis of sampling, environmental sampling techniques, analytical techniques, and data analysis.

CIVL 7220/7226 WATER AND WASTEWATER OPERATIONS AND PROCESSES I (3) LEC. 3. Pr., CIVL 3230. Coreq., CIVL 6210. Physical and chemical principles applied to water and wastewater treatment. Advanced mathematical and modeling concepts. Departmental approval.

CIVL 7230/7236 WATER AND WASTEWATER OPERATIONS AND PROCESSES II (3) LEC. 3. Pr., CIVL 7220 or CIVL 7226. Rigorous analysis of unit operations and processes used in modern water and wastewater treatment systems. Mixing, coagulation, sedimentation, filtration, and chemical precipitation. Departmental approval.

CIVL 7240/7246 WATER AND WASTEWATER OPERATIONS AND PROCESSES III (3) LEC. 3. Pr., CIVL 7220 or CIVL 7226. Design and analysis of unit operations and processes used in modern water and wastewater treatment systems are rigorously examined: adsorption, ion exchange, membrane filtration, reverse osmosis, gas transfer, corrosion, and treatment residuals processing. Departmental approval.

CIVL 7250/7256 BIOLOGICAL WASTEWATER TREATMENT (3) LEC. 3. Pr., CIVL 6250 or CIVL 6256. Development and application of the theories of biological waste treatment. Departmental approval.

CIVL 7260/7266 ENVIRONMENTAL NUTRIENT CONTROL PROCESSES (3) LEC. 3. Pr., CIVL 7250 or CIVL 7256. The nature, sources, and impacts of aquatic nutrients in the environment: microbial nutrient cycles, biological nutrient removal processes, chemical nutrient control processes, natural systems for nutrient removal.

CIVL 7270/7276 ADVANCED NUMERICAL METHODS FOR SOLVING ENVIRONMENTAL ENGINEERING PROBLEMS (3) LEC. 3. Pr., CIVL 3010. Basic concepts of finite element (FE) analysis. Development of FE computer codes for solving environmental engineering problems. FE grid generation and visualization methods. Departmental approval.

CIVL 7280/7286 SURFACE WATER QUALITY MODELING (3) LEC. 3. Pr., CIVL 3230. Physical, chemical, biological and hydrological considerations relating to the degradation and self-purification of streams, lakes, and estuaries. Water uses and water quality goals, objectives and criteria. Principles of water quality modeling and waste load allocation. Departmental approval.

CIVL 7310/7316 FOUNDATION ENGINEERING (3) LEC. 3. Pr., CIVL 3310 and CIVL 4600. Analysis, design and construction of shallow and deep foundation systems.

CIVL 7330/7336 SOIL PROPERTIES (3) LEC. 3. Pr., CIVL 3310. Soil behavior, shear strength, compressibility, hydraulic conductivity, and measurement of soil properties.

CIVL 7340/7346 SOIL DYNAMICS (3) LEC. 3. Pr., CIVL 3310. Soil behavior during dynamic loads, wave propagation, dynamically loaded foundations, geotechnical earthquake engineering.

CIVL 7360/7366 EARTH SLOPES AND DAMS (3) LEC. 3. Pr., CIVL 3310. Engineering design of earth slopes, slope stability, cut slopes, embankments, settlement. Dam siting, stability, flownets, seepage analysis. Departmental approval.

CIVL 7390/7396 IN SITU TESTING OF SOILS (3) LEC. 3. Pr., CIVL 4310. In situ tests used in geotechnical engineering: test procedures, interpretation of results, and designing from in situ geotechnical data.

CIVL 7410/7416 TEMPORARY STRUCTURES AND FACILITIES (3) LEC. 3. Pr., STAT 3010 and CIVL 3310 and CIVL 3610. Construction loads, applicable codes and standards, and design principles for temporary structures; planning and implementation of construction facilities; economic analysis of alternatives.

CIVL 7500/7506 TRAFFIC FLOW THEORY (3) LEC. 3. Pr., CIVL 6500 or CIVL 6506. Basic phenomena underlying traffic stream movement and individual vehicle behavior. Topics include flow parameters and relationships; microscopic and macroscopic flow models; equations of motion and state; single and multi-regime flow models. Departmental approval.

CIVL 7520/7526 PUBLIC TRANSPORTATION (3) LEC. 3. Pr., CIVL 3510. Technology and characteristics of public transportation; transportation demand analysis; transit users; innovative technologies. Departmental approval.

CIVL 7540/7546 TRANSPORTATION SAFETY (3) LEC. 3. Pr., CIVL 6500 or CIVL 6506. Transportation safety problems and the engineer's role in developing and administering safety programs. Topics include hazardous location identification; analysis of accident data; development and evaluation of accident countermeasures and safety programs. Departmental approval.

CIVL 7550/7556 ROADSIDE DESIGN (3) LEC. 3. Pr., CIVL 6500 or CIVL 6506. Concepts of roadside design that can prevent or reduce crash severity. Topics include design, selection, placement and construction of longitudinal barriers, crash cushions, bridge rails, transitions, end terminals, sign posts, and other roadside features. Departmental approval.

CIVL 7610/7616 STRUCTURAL DYNAMICS I (3) LEC. 3. Pr., CIVL 6670 or CIVL 6676. Single-degree-of-freedom systems, numerical solution techniques, response spectrum, multi-degree-of-freedom systems, eigenproblem solution, mode superposition analysis.

CIVL 7620/7626 STRUCTURAL DYNAMICS II (3) LEC. 3. Pr., CIVL 7610 or CIVL 7616. Analysis of MDOF systems by direct numerical integration, continuous systems, nonlinear dynamics response, earthquake response of structures.

CIVL 7630/7636 ADVANCED STRESS ANALYSIS (3) LEC. 3. Pr., CIVL 3610. Hooke's 1-D, 2-D, 3-D stress-strain relations and applications, stress and strain transformations and Mohr's circle, material properties and failure theories, biaxial bending, unsymmetrical bending, composite material members, shear center, torsional stress, stress concentrations, beams on elastic foundations.

CIVL 7640/7646 STABILITY OF STRUCTURES (3) LEC. 3. Coreq., CIVL 6670. Introduction to stability and failure of compression members, rigid bar buckling, elastic and inelastic buckling of columns, approximate methods of buckling analysis, beam-columns, buckling of frames, torsional buckling, lateral torsional buckling of beams.

CIVL 7650/7656 ADVANCED ANALYSIS OF FRAMED STRUCTURES (3) LEC. 3. Pr., CIVL 6670 or CIVL 6676. Matrix analysis of framed structures, elastic supports, specified displacements, member end releases, principle of minimum potential energy, geometric non-linearity, frame stability, substructures.

CIVL 7660/7666 FINITE ELEMENT METHODS IN STRUCTURAL MECHANICS (3) LEC. 3. Pr., CIVL 6670 or CIVL 6676. Introduction to finite element analysis; variational principles. 1D, 2D and 3D element formulation; nonlinear (geometric and constitutive) formulations and solutions; eigenvalue problems. Departmental approval.

CIVL 7670/7676 NUMERICAL TECHNIQUES IN STRUCTURAL ANALYSIS (3) LEC. 3. Basic concepts of non-linear analyses, formulation of the continuum mechanics incremental equations, total and updated Lagrangian formulations, finite elements for non-linear analyses, non-linear solution strategies.

CIVL 7680/7686 FATIGUE AND FRACTURE MECHANICS (3) LEC. 3. Pr., CIVL 4650. Linear-elastic and elastic-plastic fracture mechanics, fatigue, yield criteria, applications to highway structures. Departmental approval.

CIVL 7690/7696 ANALYSIS OF PLATE AND SHELL SYSTEMS (3) LEC. 3. Pr., CIVL 6670 or CIVL 6676. Analysis of isotropic and anisotropic plates with various shapes and boundary conditions due to lateral and in-plane loads; large deflection considerations; numerical techniques; bending and membrane behavior of isotropic shells. Departmental approval.

CIVL 7710/7716 APPLIED ELASTICITY (3) LEC. 3. Pr., CIVL 6670 or CIVL 6676. Analysis of stress-strain; generalized stress-strain relationships; solution of elasticity problem by potentials; thick cylinders, disks and spheres; energy principles and introduction of variational methods. Departmental approval.

CIVL 7770/7776 VARIATIONAL METHODS IN STRUCTURAL MECHANICS (3) LEC. 3. Pr., CIVL 6670 or CIVL 6676. Calculus of variations; derivation of Euler's equations and boundary conditions; applications of energy principles to structures; variational approaches to finite element methods. Departmental approval.

CIVL 7810/7816 ADVANCED CONSTRUCTION MATERIALS (4) LEC. 3. LAB. 3. Pr., CIVL 6810 or CIVL 6816. Evaluate soils, unbound and stabilized materials, hot mix asphalt, and cement concrete products; stress-strain relationships; thermal expansion; design and testing of non-traditional construction products. Departmental approval.

CIVL 7820/7826 ADVANCED PAVEMENT DESIGN AND REHABILITATION (3) LEC. 3. Pr., CIVL 7810 or CIVL 7816. Pavement management concepts, life cycle costs analysis, design and rehabilitation alternatives, serviceability concepts, empirical thickness selection models, reliability.

CIVL 7830 ASPHALT CONCRETE MIX DESIGN (3) LEC. 2. LAB. 3. Marshall and Superpave mix design methods and QC/QA for asphalt concrete are covered. Topics include aggregate, asphalt and mix properties, laboratory testing and proportion optimization.

CIVL 7840/7846 PAVEMENT MANAGEMENT AND REHABILITATION (3) LEC. 3. Pr., CIVL 3820. Topics include: network and project level management, pavement distress surveys, non-destructive testing for condition measurements, flexible and rigid pavement maintenance and rehabilitation practices. Departmental approval.

CIVL 7860 PAVEMENT CONSTRUCTION (3) LEC. 3. Pr., CIVL 3820. Operation, quality control and specifications of component construction processes for asphalt and concrete paving; and overview of major rehabilitation strategies.

CIVL 7870 ADVANCED CHARACTERIZATION OF PAVEMENT MATERIALS (3) LEC. 2. LAB. 3. Pr., CIVL 3820. This course introduces theories and procedures for determining fundamental properties of asphalt materials for advanced material evaluation and pavement design.

CIVL 7950 GRADUATE SEMINAR (1) SEM. 1. SU. Course may be repeated for a maximum of 6 credit hours.

CIVL 7970/7976 SPECIAL TOPICS IN CIVIL ENGINEERING (1-3) LEC. Individual student or group endeavor under direct faculty supervision involving special topics of an advanced nature in civil engineering. Course may be repeated for a maximum of 9 credit hours.

CIVL 7980/7986 ENGINEERING PROJECT (1-10) LEC. Departmental approval. Course may be repeated with change in topics.

CIVL 7990 RESEARCH AND THESIS (1-10) MST. Credit to be arranged. Departmental approval.

CIVL 8990 RESEARCH AND DISSERTATION (1-10) DSR. Credit to be arranged. Departmental approval.

Clinical Pharmacy Practice - PYPP

Courses

PYPP 5550/5553 DRUG INDUCED DISEASE (2) LEC. 2. Patient evaluation in drug-induced disease and polypharmacy.

PYPP 5600 DRUG INFORMATION-SELECTIVE (5) PRA. 5. Advanced practice experience in providing drug information services to health care providers.

PYPP 5610 COMMUNITY PHARMACEUTICAL CARE (5) PRA. 5. Advanced Practice Experience in a community pharmacy practice setting that provides pharmaceutical care services such as disease management and other advanced patient care activities.

PYPP 5620 MEDICINE I (5) PRA. 5. Advanced practice experience in providing Inpatient Pharmaceutical Care.

PYPP 5630 MEDICINE II - SELECTIVE (5) PRA. 5. Advanced practice experience in providing Inpatient Pharmaceutical Care. Additional experience beyond PYPP 5620.

PYPP 5640/5643 PRIMARY/AMBULATORY CARE I (5) PRA. 5. Advanced practice experience in providing pharmaceutical care to patients as they initially access the health care system.

PYPP 5650/5653 PRIMARY/AMBULATORY CARE II (5) PRA. 5. Advanced practice experience in providing pharmaceutical care to patients as they initially access the health care system. Continuation of PYPP 5640.

PYPP 5660 HEALTH SYSTEM PRACTICE (5) PRA. 5. Advanced practice experience in a health system setting that prepares the student to adapt and function within systems of integrated pharmaceutical care services.

PYPP 5670 PRACTICE ELECTIVE I (5) PRA. 5. Elective experience in an advanced practice experience setting in which the student establishes personal learning goals and responsibilities.

PYPP 5680 PRACTICE ELECTIVE II (5) PRA. 5. Elective experience in an advanced practice experience setting in which the student establishes personal learning goals and responsibilities.

PYPP 5690 PROFESSIONAL SEMINAR (1) PRA. 2. SU. Student will demonstrate the ability to evaluate and synthesize pertinent literature, and effectively communicate pharmacotherapy-related material in one platform (seminar) presentation and one poster.

PYPP 5700 ADVANCED PRACTICE EXPERIENCE PROFESSIONAL COMMUNICATION (0) PRA. SU. Students will synthesize pertinent literature, and communicate pharmacotherapy-related material in patient journal club, inservice, and written presentations.

PYPP 5710 METABOLIC SYNDROME (2) LEC. 2. Advanced material on the assessment and treatment of disease states related to Metabolic Syndrome.

PYPP 5730 DRUGS IN PREGNANCY (2) LEC. 2. Medication issues related to pregnancy and lactation.

PYPP 5740 PEDIATRIC PHARMACOTHERAPY (2) LEC. 2. Medication issues related to the pediatric population.

PYPP 5750 ANTITHROMBOTIC/THROMBOLYTIC THERAPY (2) LEC. 2. Provides the student with a working knowledge of both basic and advanced pharmacotherapeutic issues related to antithrombotic and thrombolytic therapy.

PYPP 5760 SELF CARE AND NONPRESCRIPTION MEDICATION (2) LEC. 2. Knowledge and skills to serve as a self care advisor to patients seeking assistance.

PYPP 5770 WOMEN'S HEALTH ISSUES (2) LEC. 2. Understanding factors that affect women's premature morbidity and mortality.

PYPP 5780 ACUTE CARE PHARMACOTHERAPY (2) LEC. This course is designed to orient the pharmacy student to the acute care environment and familiarize them with patient disease states and pharmacotherapy associated with the acutely ill patient.

PYPP 5790 PSYCHIATRIC PHARMACOTHERAPY (2) LEC. 2. To expose pharmacy students to psychiatry and to develop a working knowledge of both basic and advanced pharmacotherapeutic issues related to psychopharmacology.

PYPP 5810 EVIDENCE-BASED PHARMACOTHERAPY (2) LEC. 2. Student pharmacists will become more proficient at literature evaluation and application of evidence-based pharmacotherapy/medicine to patient care.

PYPP 5960/5963 SPECIAL PROBLEMS IN PHARMACY PRACTICE (1-3) LEC. Selected topics related to pharmacy practice. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PYPP 5970 SPECIAL TOPICS IN PHARMACY PRACTICE (2) LEC. 2. Instruction and discussion in a selected current topic in Pharmacy Practice. Course may be repeated for a maximum of 4 credit hours.

Communication - COMM

Courses

COMM 1000/1003 PUBLIC SPEAKING (3) LEC. 3. Oral communication theory and practice in a public speaking setting with emphasis on content, organization, delivery, and adaptation to the audience.

COMM 2010 MESSAGE PREPARATION AND ANALYSIS (3) LEC. 3. Pr., COMM 1000. Theory underlying the construction of rhetorical messages as well as critical perspectives for the analysis of public discourse.

COMM 2400 COMMUNICATION IN ORGANIZATIONS (3) LEC. 3. Communication in modern organizations emphasizing practice in areas such as interviewing, meeting management, and professional presentations.

COMM 2410 SMALL GROUP COMMUNICATION (3) LEC. 3. Theory and practice of competent communication in task-oriented small group settings such as committees. Topics include roles, leadership, decision making, problem solving, and conflict management.

COMM 2910 COMMUNICATION PRACTICUM (1-3) AAB/PRA. SU. Practical experiences in potential career fields gained while working in professional settings. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

COMM 3100 SPEAKING BEFORE AUDIENCES (3) LEC. 3. Pr., COMM 1000. Refining the knowledge and skills necessary for communicating clearly and effectively in oral presentations. Recommended for COMM majors only.

COMM 3110/3113/3114 PERSUASION (3) LEC. 3. Understanding and analyzing persuasive messages. Survey of theoretical approaches to attitude formation and change. Developing skills as a critical evaluation of persuasive messages.

COMM 3300 COMMUNICATION AND CONFLICT (3) LEC. 3. Enhance awareness of and develop skills in managing conflict processes in interpersonal relationships.

COMM 3450/3453 INTERCULTURAL COMMUNICATION (3) LEC. 3. Different types of problems encountered when communicating with different cultures.

COMM 3500 FOUNDATIONS OF HUMAN COMMUNICATION (3) LEC. 3. Pr., CMJN 2100. Theories examining the nature of human communication.

COMM 3600 FOUNDATIONS OF RHETORIC AND SOCIAL INFLUENCE (3) LEC. 3. Pr., CMJN 2100. Rhetorical theory from its classical roots to contemporary thinkers. Relates rhetorical theory and analysis to understanding persuasive discourse in our society.

COMM 3650 RHETORIC OF SPORTS (3) LEC. 3. Examines sports in the public sphere by using rhetorical theories to understand how sports contribute to social issues such as identity, community, ethnicity, gender, and politics.

COMM 3700 ARGUMENTATION (3) LEC. 3. Examination of the critical tools necessary to evaluate arguments in current public discourse.

COMM 3970 SPECIAL TOPICS IN COMMUNICATION (3-6) LEC. Topics that range beyond what is covered in other courses within the current curriculum. The specific subject matter is left up to the individual instructor. Course may be repeated for a maximum of 6 credit hours.

COMM 4100 COMMUNICATION STRATEGIES OF SOCIAL MOVEMENTS (3) LEC. 3. Pr., CMJN 2100 and COMM 3600 and COMM 3500. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Examines persuasive strategies used in social movements to attract members, solidify support, and effect social change or departmental approval.

COMM 4400 GENDER COMMUNICATION (3) LEC. 3. Pr., CMJN 2100 and COMM 3500 and COMM 3600. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Examination of the ways in which gender is communicated interpersonally, through small groups and organizations, and through the mass media.

COMM 4410 THEORIES OF LEADERSHIP (3) LEC. 3. Pr., CMJN 2100 and COMM 3500 and COMM 3600. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Examination of theory and research in leadership as a communication variable and behavioral practice in small group and organizational settings.

COMM 4470 HEALTH COMMUNICATION (3) LEC. 3. Pr., CMJN 2100 and COMM 3500 and COMM 3600. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. The history, functions, and concepts central to the practice of health communication.

COMM 4500 MESSAGE STRUCTURES AND INFORMATION PROCESSING (3) LEC. 3. Pr., CMJN 2100 and COMM 3500 and COMM 3600. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Relationship between message structures and information processing in both cognitive and affective domains during speaking and listening.

COMM 4600 POLITICAL COMMUNICATION (3) LEC. 3. Pr., CMJN 2100 and COMM 3500 and COMM 3600. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Critical analysis and evaluation of political communication.

COMM 4700 LEGAL COMMUNICATION (3) LEC. 3. Pr., CMJN 2100 and COMM 3500 and COMM 3600. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Examination of the trial process including jury selection, opening statement, direct examination, cross examination, and closing arguments.

COMM 4800 INTERPERSONAL COMMUNICATION (3) LEC. 3. Pr., COMM 3500 and COMM 3600 and CMJN 2100. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. The relationship between communication and the formation of self identity and maintenance of relationships

COMM 4810 NONVERBAL COMMUNICATION (3) LEC. 3. Pr., CMJN 2100 and COMM 3500 and COMM 3600. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Focuses on the theory of non-language based communication and the impact of these messages on the overall communication process.

COMM 4850 DISCOURSE IN SOCIAL LIFE (3) LEC. 3. Pr., COMM 3500 and COMM 3600 and CMJN 2100. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Language and social interaction as they reflect and shape identity of self, relationships, and group members.

COMM 4920 INTERNSHIP (3-6) AAB/INT. 3. SU. Pr., COMM 3500 and COMM 3600 and CMJN 2100. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Opportunity to apply classroom experience in a job setting. Admission to Internship program. Course may be repeated for a maximum of 6 credit hours.

COMM 4930 DIRECTED STUDIES IN COMMUNICATION (3) IND. 3. Pr., COMM 3500 and COMM 3600 and CMJN 2100. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Independent study on a specific topic of interest not already addressed in any regular Communication course. May repeat with a change of topic for a maximum of 6 credit hours or departmental approval.

COMM 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. CMJN 2100 and COMM 3500 and COMM 3600. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Course may be repeated for a maximum of 3 credit hours.

COMM 4970/4973 SPECIAL TOPICS IN COMMUNICATION (3) LEC. 3. Pr., COMM 3500 and COMM 3600 and CMJN 2100. Topics in communication. May repeat with a change in topic or departmental approval. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

COMM 4997 HONORS THESIS (1-3) IND. Pr., Honors College. CMJN 2100 and COMM 3500 and COMM 3600. 2.3 GPA. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Course may be repeated for a maximum of 3 credit hours.

COMM 7000 COMMUNICATION THEORY (3) LEC. 3. A critical examination of contemporary theories in the field of communication.

COMM 7010 HISTORICAL, DESCRIPTIVE, AND CRITICAL APPROACHES TO COMMUNICATION RESEARCH (3) LEC. 3. Consideration of the scope and nature of these types of research and their contribution to understanding human communication.

COMM 7020 EMPIRICAL APPROACHES TO COMMUNICATION RESEARCH (3) LEC. 3. Quantitative research in communication; emphasis on understanding and doing empirical research.

COMM 7230 RHETORICAL CRITICISM (3) LEC. 3. Advanced methods in rhetorical criticism including tools for the analysis of persuasive messages.

COMM 7300 APPROACHES TO STUDYING LANGUAGE AND SOCIAL INTERACTION (3) LEC. 3. Major approaches to studying language and social interaction that collectively make up a substantive area of inquiry known as discourse analysis.

COMM 7410 DEVELOPMENT OF RHETORICAL THEORY (3) LEC. 3. Historical survey of rhetorical theory from ancient to contemporary era; special attention to the role of rhetoric in shaping attitudes towards persuasion.

COMM 7420 SEMINAR IN PERSUASION AND ATTITUDE CHANGE (3) LEC. 3. A critical examination of current theory and research in the area of the persuasive act and its effects.

COMM 7430 SEMINAR IN AMERICAN PUBLIC ADDRESS (3) LEC. 3. Investigates key issues and debates that have emerged in post-WW II America.

COMM 7440 SEMINAR IN ARGUMENTATION AND DEBATE (3) SEM. 3. The fundamental theories of argumentation will be analyzed.

COMM 7450 SEMINAR IN INTRAPERSONAL PROCESSES IN COMMUNICATION (3) SEM. 3. Theories of cognitive and affective processing of information during speaking and listening.

COMM 7460 SEMINAR IN INTERPERSONAL COMMUNICATION (3) SEM. 3. Theories of the structure and function of interpersonal (dyadic) communication focusing on conversational behavior, traits, relationships, and persuasion.

COMM 7470 SEMINAR IN SMALL GROUP COMMUNICATION (3) SEM. 3. Advanced study of the principles of communication as they apply to the small group setting.

COMM 7480 SEMINAR IN ORGANIZATIONAL COMMUNICATION (3) SEM. 3. An in-depth approach to the study of communication processes within the setting of modern organizations.

COMM 7490 HEALTH COMMUNICATION (3) LEC. 3. Examination and application of social science research approaches to the study of health communication.

COMM 7500 GENDER COMMUNICATION (3) LEC. 3. Explores current theories and research on the relationship between communication and gender.

COMM 7600 MASS COMMUNICATION THEORY (3) LEC. 3. Explores major areas of concern to the theoretical study of mass communication and the social impact of mediated messages.

COMM 7610 STUDIES IN POPULAR CULTURE AND MASS COMMUNICATION (3) LEC. 3. Critical approaches to identifying, interpreting and experiencing popular culture texts within historical, cultural and communication contexts.

COMM 7620 BROADCAST PROGRAMMING AND CRITICISM (3) LEC. 3. Explores critical, theoretical, and organizational issues relevant to programming and the production of culture within mass media environments.

COMM 7630 MEDIA MANAGEMENT (3) LEC. 3. In-depth analysis of current management issues specific to media managers in a multi-cultural world.

COMM 7640 SEMINAR IN FILM THEORY AND CRITICISM (3) SEM. 3. Explores classical and contemporary film theories and criticism.

COMM 7650 THE MASS MEDIA AND AMERICAN POLITICS (3) LEC. 3. Examination of the role of the mass communication system in the American political system.

COMM 7660 CULTURAL STUDIES IN MASS MEDIA (3) LEC. 3. Examination of communication research approaches to the study of culture and media.

COMM 7670 CONTEMPORARY ISSUES IN FIRST AMENDMENT LAW (3) LEC. 3. Exploration of controversial issues and cases in First Amendment Law that have been recently decided, are currently before courts, and have shaped the constitutional landscape in the United States.

COMM 7680 SPORTS, MEDIA, AND CULTURE (3) LEC. 3. Cultural implications of the relationship between sports and media.

COMM 7810 PUBLIC RELATIONS THEORY (3) LEC. 3. Current areas of concern in the theoretical study of public relations.

COMM 7820 PUBLIC RELATIONS CAMPAIGNS (3) LEC. 3. Focuses on the application of Public Relations and communication concepts to real campaign challenges.

COMM 7830 PUBLIC RELATIONS CASE STUDIES (3) LEC. 3. Examination of research on Public Relations case studies to provide a theoretical basis for analyzing real-life Public Relations situations.

COMM 7840 COMMUNICATION TRAINING AND CONSULTING (3) LEC. 3. The theory, concepts and skills needed to be an effective communications trainer or consultant.

COMM 7930 DIRECTED STUDIES (1-3) IND. Conferences, readings, research, and reports in one of the fields listed: a) general communication, b) mass communication, or c) public relations. Course may be repeated for a maximum of 3 credit hours.

COMM 7970 SPECIAL TOPICS IN COMMUNICATION (3) SEM. 3. Advanced treatment of contemporary topics, trends, current research findings and opportunities. May be repeated for credit with change in topic.

COMM 7980 NON-THESIS PROJECT IN COMMUNICATION (3-6) LEC. SU. Pr., COMM 7000 and COMM 7010 and COMM 7020. Minimum 27 graduate hours including COMM 7000, COMM 7010, COMM 7020. Professional experience in communication area of interest. Must include managerial experience. Only 3 hours will apply to the degree.

COMM 7990 RESEARCH AND THESIS (1-6) MST. Course may be repeated with change in topics.

Communication Disorders - CMDS

Courses

CMDS 2500/2503 COMMUNICATION DISORDERS IN SOCIETY (2) LEC. 2. Information on stuttering, speech, language, voice disorders and hearing impairment and how to interact with individuals with communication disorders.

CMDS 3000 INTRODUCTION TO SPEECH PATHOLOGY-AUDIOLOGY (3) LEC. 3. Survey of the field of speech pathology-audiology. Includes history of the profession, the inter-relatedness of the various pathologies, general principles of evaluation and therapy and the profession itself.

CMDS 3400 ANATOMY AND PHYSIOLOGY OF SPEECH (3) LEC. 3. The study of anatomy and physiology of speech production including respiratory, laryngeal and articulatory-resonance systems and the process swallowing. Speech acoustics will be introduced.

CMDS 3410 PHONETICS (3) LEC. 3. Principles of phonetics and their application to speech.

CMDS 3560 NEUROANATOMY FOR COMMUNICATION DISORDERS (3) LEC. 3. Anatomy and physiology of the central nervous system as it relates to speech, language, hearing and swallowing function and disorders.

CMDS 4400 ADULT NEUROGENIC COMMUNICATION DISORDERS (3) LEC. 3. Study of the disorders of speech, language, and swallowing in adults occurring as a result of CNS pathologies and their evaluation and treatment.

CMDS 4510 ARTICULATION DISORDERS (3) LEC. 3. Principles of normal and deviant articulation acquisition.

CMDS 4520 LANGUAGE ACQUISITION (3) LEC. 3. First language acquisition in childhood and its change throughout the life span.

CMDS 4530 FLUENCY DISORDERS (3) LEC. 3. Principles of fluent and disfluent verbal behavior. Departmental approval.

CMDS 4540 VOCAL DISORDERS (3) LEC. 3. Principles of normal and deviant vocal behavior.

CMDS 4560 CHILD AND ADOLESCENT LANGUAGE DISORDER (3) LEC. 3. Pr., CMDS 4520. Overview of research dealing with the nature, assessment and treatment of language disorders in child and adolescent populations. Departmental approval.

CMDS 4580 INTRODUCTION TO CLINICAL PROCEDURES IN SPEECH-LANGUAGE PATHOLOGY (3) LEC. 3, CLN/LEC. 30. Pr., CMDS 4510 and CMDS 4520. Orientation to clinical activities, management methods and preparation of professional reports.

CMDS 4600 INTRODUCTION TO AUDIOLOGY (3) LEC. 3. Principles of auditory reception and the problems involved in measuring, evaluating and conserving hearing.

CMDS 4620 HEARING REHABILITATION (3) LEC. 3. Pr., CMDS 4600. Rehabilitation problems of children and adults in the area of auditory training, speech reading and speech conservation; includes clinical practice. Departmental approval.

CMDS 4650 INTRODUCTION TO CLINICAL PROCEDURES IN AUDIOLOGY (3) LEC. 3. Pr., CMDS 4600. Audiological instrumentation and test procedures.

CMDS 4910 CLINICAL PRACTICUM IN SPEECH-LANGUAGE PATHOLOGY (1) PRA. 1. Pr., CMDS 4580. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

CMDS 4930 DIRECTED STUDY IN COMMUNICATION DISORDERS (1-3) IND. Directed learning experience in communication disorders involving bibliographic research, writing, gaining expertise with laboratory/clinical procedures or conducting directed research. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CMDS 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CMDS 4997 HONORS THESIS (1-3) RES. Pr., Honors College. Course may be repeated for a maximum of 6 credit hours.

CMDS 5810 PRIVATE PRACTICE (3) LEC. 3. Concepts and strategies for private practice in the areas of clinical and industrial audiology.

CMDS 7500 CLINICAL PROBLEMS IN SPEECH (1) PRA. 1. Pr., CMDS 4580 and CMDS 4910. Clinical practicum in evaluation and treatment of individuals with speech-language disorders. Course may be repeated for a maximum of 4 credit hours.

CMDS 7510 ADVANCED ARTICULATION/PHONOLOGICAL DISORDERS (3) LEC. 3. Pr., CMDS 4510. Empirical and theoretical bases for articulatory pathologies.

CMDS 7520 LANGUAGE DISORDERS: BIRTH TO FIVE (3) LEC. 3. Empirical and theoretical bases for evaluation and treatment of language disorders for the birth to five population.

CMDS 7530 ADVANCED FLUENCY DISORDERS (3) LEC. 3. Pr., CMDS 4530. Empirical and theoretical bases for dysfluency disorders, diagnoses and therapies.

CMDS 7540 ADVANCED VOICE DISORDERS (3) LEC. 3. Pr., CMDS 4540. Empirical and theoretical bases for voice pathologies, diagnoses and therapies.

CMDS 7550 ADULT APHASIA (3) LEC. 3. Pr., CMDS 4520. Empirical and theoretical bases for adult language disorders associated with CNS pathologies, diagnoses and therapies.

CMDS 7560 CRANIOFACIAL ANOMALIES (3) LEC. 3. A review of syndromic and non-syndromic craniofacial disorders including cleft lip/palate. Assessment and treatment of speech and language problems associated with these anomalies is emphasized.

CMDS 7570 EVALUATION OF RESEARCH IN SPEECH PATHOLOGY AND AUDIOLOGY (3) LEC. 3. Survey of experimental designs and statistical procedures used in speech-language pathology/audiology literature for consumers of research.

CMDS 7590 LANGUAGE DISORDERS: SCHOOL-AGE (3) LEC. 3. Empirical and theoretical bases for evaluation and treatment of language disorders for school-age children through adolescence.

CMDS 7600 CLINICAL PROBLEMS IN HEARING (2) LEC. 2. Pr., CMDS 4650 and CMDS 4600 and CMDS 4620. Course may be repeated for a maximum of 12 credit hours.

CMDS 7700 CLINICAL PROBLEM SOLVING I (2) LEC. 2. This course will help students develop problem-solving skills that can be applied to clinical practice in Speech-Language Pathology.

CMDS 7720 CLINICAL PROBLEM SOLVING II (2) LEC. 2. This course will promote advanced problem-solving skills that can be applied to clinical practice in Speech-Language Pathology.

CMDS 7740 CLINICAL PROBLEM SOLVING III (2) LEC. 2. This course will promote advanced problem-solving skills that can be applied to clinical practice in Speech-Language Pathology.

CMDS 7810 MOTOR SPEECH DISORDERS (3) LEC. 3. Pr., CMDS 7800. Empirical and theoretical bases for motor speech disorders, diagnoses and therapies.

CMDS 7820 DYSPHAGIA (3) LEC. 3. Pr., CMDS 7800. The role of speech-language pathology in diagnosing and treating swallowing disorders in children and adults. Emphasis will be placed upon clinical and instrumental assessment and treatment strategies.

CMDS 7840 AUGMENTATIVE AND ALTERNATIVE COMMUNICATION (3) LEC. 3. Process and specific equipment involved in assessment, prescription and intervention with adults and children who are unable to use traditional communication modes.

CMDS 7860 SPEECH SCIENCE (3) LEC. 3. Pr., CMDS 3550. Acoustic properties of speech, physiology and perception of the speech signal, and an orientation to instrumentation used in speech science.

CMDS 7920 INTERNSHIP IN SPEECH-LANGUAGE PATHOLOGY (5) LEC. 5. SU. Completion of all academic course work. Successful completion of comprehensive exams or enrollment in graduate thesis. Course may be repeated for a maximum of 10 credit hours.

CMDS 7930 DIRECTED STUDIES (1-3) IND. Conferences, readings, research or reports in a specialized area of communication disorders. Course may be repeated for a maximum of 3 credit hours.

CMDS 7970 SPECIAL TOPICS SEMINAR (1-3) SEM. Advanced treatment of contemporary topics and trends, as well as current research aspects of audiology and speech-language pathology. Course may be repeated for a maximum of 3 credit hours.

CMDS 7990 RESEARCH AND THESIS (1-5) MST. Course may be repeated with change in topics.

CMDS 8100 HEARING SCIENCE (3) LEC. 3. Pr., CMDS 4600 and CMDS 4620. Introduction to instrumentation and calibration of audiometric equipment. Auditory perception in normal-hearing and hearing impaired listeners. Departmental approval.

CMDS 8110 AUDITORY PHYSIOLOGY (3) LEC. 3. Pr., CMDS 4400. Departmental approval. Detailed study of the anatomy and physiology of the human auditory system.

CMDS 8120 AUDIOLOGY CLINICAL METHODS (2) LEC. 2. LAB. 0. Use of audiometric equipment, administering of audiological tests, recording test results, and interpretation of test findings.

CMDS 8200 DIAGNOSTIC AUDIOLOGY (3) LEC. 3. Pr., CMDS 4600 and CMDS 4650. Basic and advanced audiometric techniques to assess the site of lesion in the auditory system.

CMDS 8210 MEDICAL ASPECTS OF HEARING DISORDERS (3) LEC. 3. Pr., CMDS 4600 and CMDS 4620. Departmental approval. Study of the disorders of hearing and their evaluation and treatment.

CMDS 8220 AMPLIFICATION I (3) LEC. 3. Pr., CMDS 4600 and CMDS 4620. Departmental approval. Background and development of hearing aids and other amplification systems; performance standards and measurement techniques; selection, fitting and dispensing procedures

CMDS 8230 CLINICAL LEVEL (2) LEC. 2. Pr., CMDS 4660. Didactic and practical training for performing audiological testing and patient management at clinical level I.

CMDS 8300 CENTRAL AUDITORY PROCESSING (3) LEC. 3. Pr., CMDS 4600 and CMDS 4620. Selected clinical procedures in audiology, including acoustic reflex measures and behavioral test of central auditory function.

CMDS 8310 AURAL REHABILITATION (3) LEC. 3. Pr., CMDS 4600 and CMDS 4620. Departmental approval. Psychosocial aspects on hearing loss; clinical and therapeutic management of older persons with hearing disorders including counseling of the hearing-impaired and their families.

CMDS 8320 CLINICAL LEVEL II (2) LEC. 2. Pr., CMDS 6230. Didactic and practical training for performing audiological testing and patient management at Clinical Level II. Summer.

CMDS 8400 PEDIATRIC AUDIOLOGY (3) LEC. 3. Pr., CMDS 4600 and CMDS 4620. Departmental approval. Etiologic factors, screening, audiological assessment, differential diagnosis and clinical management of infants and children with hearing disorders.

CMDS 8410 AURAL HABILITATION (3) LEC. 3. Pr., CMDS 4600 and CMDS 4620. The parameters involved in the management of hearing-impaired school-aged children.

CMDS 8420 AMPLIFICATION II (3) LEC. 3. Pr., CMDS 6220. Review of recent trends in hearing aid technology including digital and Programmable instruments.

CMDS 8430 CLINICAL LEVEL III (2) LEC. 2. Pr., CMDS 6230 and CMDS 6320. Didactic and practical training for performing audiological testing and patient management at Clinical Level III.

CMDS 8500 ELECTROPHYSIOLOGICAL PROCEDURES IN AUDIOLOGY (3) LEC. 3. Pr., CMDS 4600 and CMDS 4620. Selected neurophysiological clinical procedures in audiology, including electronystagmography and auditory evoked potentials.

CMDS 8510 CLINICAL LEVEL IV (2) LEC. 2. Pr., CMDS 6230 and CMDS 6320. Didactic and practical training for performing audiological testing and patient management at Clinical Level IV.

CMDS 8520 HEARING CONSERVATION (3) LEC. 3. Pr., CMDS 6310. A study of the effects of noise on the auditory system and implementation of hearing conservation programs in industry, schools and the military.

CMDS 8570 EVALUATION OF RESEARCH IN SPEECH PATHOLOGY AND AUDIOLOGY (3) LEC. 3. Survey of experimental designs and statistical procedures used in speech-language pathology/audiology literature for consumers of research.

CMDS 8600 BALANCE DISORDERS (3) LEC. 3. Pr., CMDS 4600 and CMDS 4620. Detailed coverage of the assessment and treatment of patients with balance disorders using nystagmography and other techniques.

CMDS 8610 IMPLANT TECHNOLOGY (3) LEC. 3. Detailed study of the assessment and treatment of patients with cochlear implants.

CMDS 8620 OUTCOME MEASURES IN AUDIOLOGY (3) LEC. 3. Pr., CMDS 6120. Application of research methodology to demonstrate efficacy in clinical service delivery in all areas of audiology practice.

CMDS 8630 COUNSELING IN AUDIOLOGY (3) LEC. 3. Advanced course in the counseling component of rehabilitative audiology.

CMDS 8700 PROFESSIONAL ISSUES (3) LEC. 3. Legal and ethical issues in clinical audiology.

CMDS 8800 THE NEUROLOGICAL BASES OF COMMUNICATION DISORDERS (3) LEC. 3. Anatomy and physiology of the central nervous system as it relates to speech, language and hearing function and disorders.

CMDS 8810 PRIVATE PRACTICE (3) LEC. 3. Concepts and strategies for private practice in the areas of clinical and industrial audiology.

CMDS 8910 CLINICAL PROBLEMS IN HEARING (2) LEC. 2. Pr., CMDS 4660 and CMDS 4600. Class is a clinical practicum.

CMDS 8920 CLINICAL INTERNSHIP (5) INT. 5. SU. Pr., CMDS 6610. Intensive clinical experience at off-campus setting up to 20 hours per week of supervised practicum.

CMDS 8940 CLINICAL RESIDENCY (6) INT. 6. SU. Pr., CMDS 6920. A full time, supervised, nine month residency at an off-campus facility that provides audiological services. Fall, Spring.

CMDS 8950 AUDIOLOGY GRAND ROUNDS (3) LEC. 3. Discussion/Seminar in timely clinical issues in audiology, clinical problem solving and case studies in contemporary audiologic service delivery.

CMDS 8980 CAPSTONE PROJECT (1) IND. 1. A third year project involving applied clinical research or development of an innovative clinical procedure.

Communication and Journalism - CMJN

Courses

CMJN 2100 CONCEPTS IN COMMUNICATIONS AND JOURNALISM (3) LEC. 2. LAB. 1. Introduction to the basic principles of various communications forms, the dominant communication theories, and communication industries.

CMJN 3350 VISUAL COMMUNICATION (3) LEC. 3. Visual literacy, cognition, aesthetics, critical evaluation and technology in human communication, with emphasis on impact of visual media in informative, interpretive, and persuasive message.

CMJN 4000 MASS MEDIA LAW AND REGULATION (3) LEC. 3. Pr., CMJN 2100. Laws and regulations that govern journalists, media content and industries. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

Community Planning - CPLN

Courses

CPLN 5000 HISTORY AND THEORY OF URBAN FORM (3) LEC. 3. The vocabulary and historical development of urban design, focusing on the environmental and cultural forces that design, shape, build, and redevelop the urban fabric.

CPLN 5010 INTRODUCTION TO COMMUNITY PLANNING (3) LEC. 3. Examines the basic principles of community design and planning, and introduces areas of specialization with the professional of planning.

CPLN 5050 URBAN ECONOMICS (3) LEC. 3. Examines the historical development and contemporary functioning of cities from an economic perspective, with focus on land use and transportation.

CPLN 5060 TRANSPORTATION AND MOBILITY (3) SEM. 3. Program approval for non-majors and ABM students. This topical seminar addresses issues related to transportation and mobility within the context of sustainable, healthy cities. Specific course content may vary from semester to semester. May count either CPLN 5060 or CPLN 6060.

CPLN 5070 PLANNING AND THE ENVIRONMENT (3) SEM. 3. Program approval for ABM students and non-majors. Addresses issues related to land use, environmental impact and policy, and sustainability. Specific course content may vary from semester to semester. May count either CPLN 5070 or CPLN 6070.

CPLN 5080 HOUSING AND NEIGHBORHOOD CONSERVATION (3) SEM. 3. Program approval for ABM students and non-majors. This topical seminar addresses planning issues related to housing and neighborhood conservation. Specific course content may vary from semester to semester. May count either CPLN 5080/6080.

CPLN 5090 COMMUNITY AND ECONOMIC DEVELOPMENT (3) SEM. 3. Program approval for ABM students and non-majors. This topical seminar addresses planning issues related to community and economic development. Specific course content may vary from semester to semester. May count either CPLN 5090 or CPLN 6090.

CPLN 5100 URBAN DESIGN METHODS (3) LEC. 3. Techniques and methodologies in urban design problem- solving and strategies for implementation. Departmental approval.

CPLN 5400 PRESERVATION PLANNING (3) LEC. 3. Planning for the preservation, restoration, conservation, adaptive reuse of historic buildings, sites and districts within the comprehensive planning process.

CPLN 5450 PLANNING HISTORY AND THEORY (3) LEC. 3.

CPLN 5460 DIGITAL APPLICATIONS (2) LEC. 2. GIS for planners: spatial data representation, visualization and spatial analysis in planning, development and location based analysis using the ArcGIS 10 software package. May count either CPLN 5460 or CPLN 6460.

CPLN 5500 ENVIRONMENTAL PLANNING (3) LEC. 3. Traditional and emerging methods and policy for environmental planning. Departmental approval.

CPLN 5970 SPECIAL TOPICS: CURRENT ISSUES IN PLANNING (3) LEC. 3. Elective seminar addresses current issues in planning. May count either CPLN 5970 or CPLN 6970.

CPLN 6000 HISTORY AND THEORY OF URBAN FORM (3) LEC. 3. The vocabulary and historical development of urban design, focusing on the environmental and cultural forces that design, shape, build, and redevelop the urban fabric.

CPLN 6010 INTRODUCTION TO COMMUNITY PLANNING (3) LEC. 3. Examines the basic principles of community design and planning, and introduces areas of specialization with the professional of planning.

CPLN 6050 URBAN ECONOMICS (3) LEC. 3. Examines the historical development and contemporary functioning of cities from an economic perspective, with focus on land use and transportation.

CPLN 6060 TRANSPORTATION AND MOBILITY (3) SEM. 3. Program approval for non-majors and ABM students. This topical seminar addresses issues related to transportation and mobility within the context of sustainable, healthy cities. Specific course content may vary from semester to semester. May count either CPLN 5060 or CPLN 6060.

CPLN 6070 PLANNING AND THE ENVIRONMENT (3) SEM. 3. Program approval for ABM students and non-majors. Addresses issues related to land use, environmental impact and policy, and sustainability. Specific course content may vary from semester to semester. May count either CPLN 5070 or CPLN 6070.

CPLN 6080 HOUSING AND NEIGHBORHOOD CONSERVATION (3) SEM. 3. Program approval for ABM students and non-majors. This topical seminar addresses planning issues related to housing and neighborhood conservation. Specific course content may vary from semester to semester. May count either CPLN 5080 or CPLN 6080.

CPLN 6090 COMMUNITY AND ECONOMIC DEVELOPMENT (3) SEM. 3. Program approval for ABM students and non-majors. This topical seminar addresses planning issues related to community and economic development. Specific course content may vary from semester to semester. May count either CPLN 5090 or CPLN 6090.

CPLN 6100 URBAN DESIGN METHODS (3) LEC. 3. Techniques and methodologies in urban design problem- solving and strategies for implementation.

CPLN 6400 PRESERVATION PLANNING (3) LEC. 3. Planning for the preservation, restoration, conservation and adaptive reuse of historic buildings, sites and districts within the comprehensive planning process.

CPLN 6450 PLANNING HISTORY AND THEORY (3) LEC. 3. This course provides future practitioners with the theoretical and historical tools and knowledge to effective in the planning field. May count either CPLN 5450 or CPLN 6450.

CPLN 6460 DIGITAL APPLICATIONS (2) LEC. 2. GIS for planners: spatial data representation, visualization and spatial analysis in planning, development and location based analysis using the ArcGIS 10 software package. May count either CPLN 5460 or CPLN 6460.

CPLN 6500 ENVIRONMENTAL PLANNING (3) LEC. 3. Traditional and emerging methods and policy for environmental planning.

CPLN 6970 SPECIAL TOPICS: CURRENT ISSUES IN PLANNING (3) LEC. 3. Elective seminar addresses current issues in planning. May count either CPLN 5970 or CPLN 6970.

CPLN 7200 URBAN DESIGN STUDIO (5) AAB/STU. 12. Coreq., CPLN 7460. Conceptual issues in urban design are explored, with an emphasis on the interpretation and representation of urban form; projects provide experience in both the making and the critical understanding of design actions within the community.

CPLN 7240 QUANTITATIVE METHODS FOR PLANNING (3) LEC. 3. Development of working knowledge of planning techniques such as data collection, basic statistics, demographic analysis, economic analysis, social research, transportation, and evaluation.

CPLN 7400 COMMUNITY PLANNING STUDIO (6) STU. 12. Application of the comprehensive planning process to assist a client in the solution of a community planning problem, under faculty direction in cooperation with other professionals.

CPLN 7430 PLANNING LAW AND ETHICS (3) LEC. 3. This course covers three key elements of the planning profession: ethics, law and plan implementation.

CPLN 7500 PLANNING WORKSHOP (3) LEC. 3. Necessary practical tools for planners, with emphasis on process, practice, and public involvement.

CPLN 7600 SYNTHESIS STUDIO I (5) AAB/STU. 12. Pr., CPLN 7400. Serves as the primary opportunity for the student to demonstrate their competency in community design and planning by translating knowledge into action through the development of a practical plan. Successful completion of comprehensive examination.

CPLN 7800 SYNTHESIS PROJECT (6) AAB/STU. 12. Demonstration of competence in community planning and design through production of an original, comprehensive project that integrates knowledge and experience in addressing a complex planning and design problem. Departmental approval.

CPLN 7920 PLANNING INTERNSHIP (1-6) AAB/INT. Professional experience in public, private or non-profit planning or planning-related agency. Departmental approval.

Community and Civic Engagement - CCEN

Courses

CCEN 2000 INTRODUCTION: COMMUNITY AND CIVIC ENGAGEMENT (3) LEC. 3. Introduction to Community and Civic Engagement introduces students to the context, issues, skills, and experience of citizenship and civic leadership in a democratic society.

CCEN 2100 WOMEN AND LEADERSHIP (3) LEC. 3. An interactive exploration of the social, political, economic, and cultural implications of women's current and historic leadership roles.

CCEN 3000 MINOR IN COMMUNITY AND CIVIC ENGAGEMENT (1) PRA. 1. SU. Completion of 15 credits toward Minor in Community and Civic Engagement. This course is required for minors in CEE. The capstone requires students to draw upon the knowledge obtained throughout their coursework and to perform relevant service projects.

CCEN 5100 ENGAGE, INTERACT, LEAD (3) LEC. 3. Pr., CCEN 2000. An interactive exploration of classic texts of leadership, civic engagement and daily reading resources available through social media.

CCEN 6100 ENGAGE, INTERACT, LEAD (3) LEC. 3. Pr., CCEN 2000. An interactive exploration of classic texts of leadership, civic engagement and daily reading resources available through social media.

CCEN 7900 COMMUNITY LEADERSHIP PRACTICUM (3) LEC. 3. This course provides graduates in CCL an opportunity to integrate course content, personal commitments, and real world experience. Completion of 9 credits toward Graduate Certificate in Collaborative Community Leadership.

Computer Sci & Software En - COMP

Courses

COMP 1000/1003/1004 PERSONAL COMPUTER APPLICATIONS (2) LEC. 2. Introduction to personal computers and software applications, including word processing, spreadsheets, databases, and presentation graphics; generation and retrieval of information with the Internet; integration of data among applications.

COMP 1200 INTRODUCTION TO COMPUTING FOR ENGINEERS AND SCIENTISTS (2) LEC. 2. Computer programming in a high-level language, with emphasis on use of the computer as a tool for engineering or science.

COMP 1201 INTRODUCTION TO COMPUTING LABORATORY (1) LAB. 2. Coreq., COMP 1200. Laboratory activities focused on computer programming in a high-level language.

COMP 1210 FUNDAMENTALS OF COMPUTING I (3) LEC. 2. LAB. 3. Introduction to the fundamental concepts of programming from an object-oriented perspective. Emphasis on good software engineering principles and development of the fundamental programming skills in the context of a language that supports the object-oriented paradigm.

COMP 1217 HONORS FUNDAMENTALS OF COMPUTING I (3) LEC. 2. LAB. 3. Pr., Honors College. Introduction to the fundamental concepts of programming from an object-oriented perspective. Emphasis on good software engineering principles and development of the fundamental programming skills in the context of a language that supports the object-oriented paradigm.

COMP 1AA0 COMPUTER COMPETENCY TEST (0) TST. SU. A comprehensive test of all material covered in COMP 1000 and COMP 1003.

COMP 2000 NETWORK PROGRAMMING WITH HTML AND JAVA (3) LEC. 3. Pr., COMP 1000 or ENGR 1110. Introduction to network programming using HTML and Java to build web pages and web-based applications; presentation graphics; retrieval of information from the Internet; integration of data among applications. Pr., COMP 1000 or higher, or ENGR 1110.

COMP 2210 FUNDAMENTALS OF COMPUTING II (4) LEC. 3. LAB. 3. Pr., COMP 1210. Software development in the context of collections (e.g., lists, trees, graphs, hashtables). Communication, teamwork, and a design experience are integral course experience.

COMP 2710 SOFTWARE CONSTRUCTION (3) LEC. 3. Pr., COMP 2210. Intensive experience in software construction, to include topics such as testing, debugging, and associated tools; configuration management; low-level file and device I/O; systems and event-driven programming.

COMP 3000 OBJECT-ORIENTED PROGRAMMING FOR ENGINEERS AND SCIENTISTS (3) LEC. 3. Pr., Departmental approval. Fundamentals of object-oriented design and programming principles; data abstraction, identifying objects, problem decomposition, design and implementation of classes. Credit for the major will not be given to CSCI and SWEN, and WIRS majors.

COMP 3010/3013/3014 SPREADSHEET-BASED APPLICATIONS WITH VISUAL BASIC (3) LEC. 2. LAB. 3. Pr., A grade of D or higher in COMP 1200-3000. COMP 1200 or higher. Design and implementation of applications such as simulations, spreadsheet front-ends for modeling, interfaces to databases, and multimedia applications.

COMP 3220 PRINCIPLES OF PROGRAMMING LANGUAGES (3) LEC. 3. Pr., COMP 2210. Study of programming language principles supporting procedural abstraction, data abstraction, storage allocation, and parallel execution; language types and examples; language translations.

COMP 3240 DISCRETE STRUCTURES (3) LEC. 3. Pr., COMP 1210. Characterization of computer science data structures and algorithms in terms of sets and relations, functions, recurrence relations. Use of propositional and predicate calculus to describe algorithms. Proving correctness and running time bounds for algorithms by induction and structural induction.

COMP 3270 INTRODUCTION TO ALGORITHMS (3) LEC. 3. Pr., COMP 3240 and COMP 2210. Algorithms for standard computational problems and techniques for analyzing their efficiency; designing efficient algorithms and experimentally evaluating their performance.

COMP 3350 COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE PROGRAMMING (3) LEC. 3. Pr., ELEC 2200 or ELEC 2210. Stored Program Computers, hardware and software components; data representation, instruction sets, addressing modes; assembly language programming; linkers, loader, and operating systems.

COMP 3500 INTRODUCTION TO OPERATING SYSTEMS (3) LEC. 3. Pr., COMP 2710 and (COMP 3350 or ELEC 2220). Structure and functions of operating systems; processes and process scheduling; synchronization and mutual exclusion; memory management; auxiliary storage management; resource allocation and deadlock; security, privacy, and ethical concerns; design tradeoffs.

COMP 3510 EMBEDDED SYSTEMS DEVELOPMENT (3) LEC. 3. Pr., COMP 2710 and (COMP 3350 or ELEC 2220). Operating system design and analysis for embedded systems: Real-time issues, resource management, scheduling, exception handling, device driver development, kernel development, synchronization, network support.

COMP 3700 SOFTWARE MODELING AND DESIGN (3) LEC. 3. Pr., COMP 2710. Current processes, methods, and tools related to modeling and designing software systems. Communication, teamwork, and a design experience are integral course experiences.

COMP 3710 WIRELESS SOFTWARE ENGINEERING (3) LEC. 3. Pr., COMP 2710. Software engineering for wireless applications: specification, process, testing, and performance evaluation. Design and development of wireless application layer software, including current protocols.

COMP 4000 SYSTEMS ADMINISTRATION FOR INFORMATION TECHNOLOGY (3) LEC. 3. Pr., COMP 2000., or Departmental approval. Principles and techniques of systems administration, including configuration of mail, file servers, print servers, databases systems, and networks.

COMP 4200 FORMAL LANGUAGES (3) LEC. 3. Pr., COMP 3240. Fundamentals of formal languages including mathematical models of regular sets, context-free languages and Turing machines; deterministic and non-deterministic models.

COMP 4270 ADVANCED ALGORITHMS (3) LEC. 3. Pr., COMP 3270., or Departmental approval. Fundamentals of designing and analyzing advanced algorithms. Algorithm design theory; computational complexity; relationship of data structures to algorithm design; study of design strategies including divide-and-conquer, the greedy method, and dynamic programming.

COMP 4300 COMPUTER ARCHITECTURE (3) LEC. 3. Pr., COMP 3350. Comparison of computer architectures, emphasizing the relationships between system software and hardware. Includes processor control and datapath organization, memory subsystem design, instruction set design, processor simulation, and quantitative analysis of computer performance.

COMP 4320 INTRODUCTION TO COMPUTER NETWORKS (3) LEC. 3. Pr., COMP 3500 or COMP 3510., or Departmental approval. Fundamentals of computer networks, OSI model, LAN, WAN, packet transmission, interworking, Internet Protocol, WWW and Java technology.

COMP 4650 INTERFACE DESIGN FOR WIRELESS APPLICATIONS (3) LEC. 3. Pr., COMP 3270. Principles of user interface design, usability, for wireless devices: Consequences of low bandwidth network connections for interface design; consequences of battery power, small screen, other limited resources on interface design; case studies; design project using technology such as WAP.

COMP 4710 SENIOR DESIGN PROJECT (3) LEC. 3. Pr., COMP 3700 or COMP 3710. Development of requirement definitions, architectural design specification, detailed design specification, testing plan and documentation for the software and/or hardware components of a comprehensive project.

COMP 4730 COMPUTER ETHICS (1) LEC. 1. Pr., PHIL 1020 or PHIL 1040. Application of ethical principles to computing-related topics, including privacy, property rights, autonomy, access, and diversity. Communication and teamwork are integral course experiences.

COMP 4960 SPECIAL PROBLEMS (1-4) IND. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

COMP 4970 SPECIAL TOPICS (3-4) LEC. Investigation of current topics in computer science and software engineering. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

COMP 4997 HONORS THESIS (3-6) IND. Pr., Honors College. Individual student endeavor consisting of directed research and writing of honors thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

COMP 5000 WEB APPLICATION DEVELOPMENT (3) LEC. 3. Design and implementation of web sites and associated applications. Emphasis on user interface design and information organization and presentation. Fall, Spring. Departmental approval.

COMP 5010 INTERACTIVE APPLICATIONS IN VISUAL BASIC (3) LEC. 3. Pr., COMP 5000. Design and implementation of applications like simulations, front-ends to Excel for modeling, interfaces to databases and multimedia applications. Departmental approval.

COMP 5020 ADVANCED WEB APPLICATION DEVELOPMENT (3) LEC. 3. Pr., COMP 5000. Design and implementation of interactive web applications in Java as applets and servlets. Use of concepts like security, internationalization, multi-threading and server/client architectures. Departmental approval.

COMP 5030 OBJECT-ORIENTED TECHNOLOGIES (3) LEC. 3. Pr., COMP 5000.Object-oriented design and implementation of a variety of applications including databases and intelligent agents with one or more object-oriented programming language. Departmental approval.

COMP 5120 DATABASE SYSTEMS I (3) LEC. 3. Pr., COMP 3270.Theoretical and applied issues related to the analysis, design, and implementation of relational database systems.

COMP 5200 THEORETICAL COMPUTER SCIENCE (3) LEC. 3. Pr., COMP 4200.The nature of the recursive sets and recursively enumerable sets. Decidability. Context-sensitive grammars and linear-bounded automata, including closure properties; oracles; reduction; the arithmetic hierarchy; the analytic hierarchy. Departmental approval.

COMP 5210 COMPILER CONSTRUCTION (3) LEC. 3. Pr., COMP 4200 and COMP 3220.Compiler organization; lexical analysis; parsing; syntax- direction translation; symbol tables; basic dependence analysis; intermediate forms; interpreters vs. compilers; run-time storage management; code generation; error detection and recovery.

COMP 5220 ADVANCED TOPICS IN PROGRAMMING LANGUAGES (3) LEC. 3. Pr., COMP 3220.Advanced topics in programming language concepts, design, and implementation.

COMP 5230 DECLARATIVE PROGRAMMING LANGUAGES AND PRINCIPLES (3) LEC. 3. Pr., COMP 3220.Functional and logic programming theoretical foundations, models and implementation issues; example language studies.

COMP 5280 OBJECT ORIENTED PROGRAMMING LANGUAGES AND PRINCIPLES (3) LEC. 3. Pr., COMP 3220.Object oriented language principles and study of the language support for these principles. Example languages and distributed object programming principles.

COMP 5320 DESIGN AND ANALYSIS OF COMPUTER NETWORKS (3) LEC. 3. Pr., COMP 4320.Computer networks design, including multiplexing, switching, routing, internetworking, transport protocols, congestion control, and performance evaluation. Departmental approval.

COMP 5330 PARALLEL AND DISTRIBUTED COMPUTING (3) LEC. 3. Pr., COMP 3500 or COMP 3510.Overview of hardware and software issues in parallel systems: fundamental parallel architectures, programming languages, tools and algorithms, parallel applications.

COMP 5340 NETWORK QUALITY ASSURANCE AND SIMULATION (3) LEC. 3. Pr., COMP 4320 or ELEC 5220.Theoretical and practical aspects of network simulation and quality assurance.

COMP 5350 DIGITAL FORENSICS (3) LEC. 3. Pr., COMP 2710 or ISMN 3080.Departmental approval. Computer compromise and forensics, with focus on computer crime and ways to uncover, protect, and exploit digital evidence.

COMP 5360 WIRELESS AND MOBILE NETWORKS (3) LEC. 3. Pr., COMP 4320.Mobile IP, wireless routing, location management, ad-hoc wireless networks, wireless TCP personal communication systems, and GSM. A Departmental approval.

COMP 5370 COMPUTER AND NETWORK SECURITY (3) LEC. 3. Pr., COMP 3270.Fundamentals of computer security. Access Control. Authentication. Digital signatures and watermarks. Modeling and performance assessment. Viruses and worms. Identification of avenues for compromising systems.

COMP 5380 PERSONAL AREA NETWORKS (3) LEC. 3. Pr., COMP 4320 or ELEC 5220.Fundamentals of very low power, short-range high-bandwidth personal network technologies such as Bluetooth and direct diffusion.

COMP 5390 3G AND 4G WIRELESS (3) LEC. 3. Pr., P/C, COMP 5360 or P/C, ELEC 5110.Exploration of technology types, design issues for handset and network systems, economics. Exploration of standards such as CT2, CT3, IS-91A. Future challenges for 4G.

COMP 5400 FUNDAMENTALS OF COMPUTER GRAPHICS (3) LEC. 3. Pr., COMP 2710 and MATH 2660.Graphics hardware and software components, coordinate systems, 2-D and 3-D transformations, 3-D viewing and projection, clipping and windowing, scan conversion and algorithms, visibility determination and shadowing, and software projects using a graphics software package.

COMP 5500 DISTRIBUTED OPERATING SYSTEMS (3) LEC. 3. Pr., COMP 4320.Basic concepts of distributed systems. Concurrent process communication and synchronization mechanisms, distributed process scheduling, distributed file systems, distributed shared memory, distributed system security and case studies.

COMP 5510 NETWORKED MULTIMEDIA SYSTEMS (3) LEC. 3. Pr., COMP 4320.Basic concepts, architecture and design of networked multimedia systems. Departmental approval.

COMP 5520 NETWORK AND OPERATING SYSTEM ADMINISTRATION (3) LEC. 3. Pr., COMP 4320. Studies of the installation, configuration and management of traditional, distributed and networked system software. Network integration of different systems. Performance monitoring, safety and security issues together with policies, politics and the laws regarding system software management.

COMP 5600 ARTIFICIAL INTELLIGENCE (3) LEC. 3. Pr., COMP 3270 and COMP 4640. Introduction to intelligent agents, search knowledge representation and reasoning, machine learning. Departmental approval.

COMP 5610 ARTIFICIAL INTELLIGENCE PROGRAMMING (3) LEC. 3. Pr., COMP 5600. Design and implementation of advanced artificial intelligence techniques including expert systems, planning, logic, and constraint programming, knowledge representation and heuristic search methods. Departmental approval.

COMP 5620 USER INTERFACE DESIGN AND EVALUATION (3) LEC. 3. Pr., COMP 4640. Theory and practice of designing interfaces for interactive systems, usability engineering techniques; implementing and evaluating interfaces. Departmental approval.

COMP 5640 INTELLIGENT AND INTERACTIVE SYSTEMS (3) LEC. 3. Pr., COMP 3270. Theory and design of intelligent and interactive software; treatments of intelligent agents and human-computer interaction.

COMP 5700 SOFTWARE PROCESS (3) LEC. 3. Pr., COMP 3700 or COMP 3710. Process models of the software life cycle as well as methods and tools for software development. Departmental approval.

COMP 5710 SOFTWARE QUALITY ASSURANCE (3) LEC. 3. Pr., COMP 3700 or COMP 3710. Processes, methods, and tools associated with the production of robust, high-quality software. Departmental approval.

COMP 5720 REAL TIME AND EMBEDDED SYSTEMS (3) LEC. 3. Pr., COMP 3500 or COMP 3510. Concepts of real-time and embedded computer systems. Studies of real-time algorithm issues such as timeliness, time-constrained scheduling and communication. Embedded system issues such as limited memory, low power, and high latency communication. Fall, Spring.

COMP 6000/6006 WEB APPLICATION DEVELOPMENT (3) LEC. 3. Design and implementation of web sites and associated applications. Emphasis on user interface design and information organization and presentation. Fall, Spring. Departmental approval.

COMP 6010/6016 INTERACTIVE APPLICATIONS IN VISUAL BASIC (3) LEC. 3. Pr., COMP 6000. Design and implementation of applications like simulations, front-ends to Excel for modeling, interfaces to databases and multimedia applications. Departmental approval.

COMP 6020/6026 ADVANCED WEB APPLICATION DEVELOPMENT (3) LEC. 3. Pr., COMP 6000. Design and implementation of interactive web applications in Java as applets and servlets. Use of concepts like security, internationalization, multi-threading and server/client architectures. Fall, Spring. Departmental approval.

COMP 6030/6036 OBJECT-ORIENTED TECHNOLOGIES (3) LEC. 3. Pr., COMP 6000. Object-oriented design and implementation of a variety of applications including databases and intelligent agents with one or more object-oriented programming language. Departmental approval.

COMP 6120/6126 DATABASE SYSTEMS I (3) LEC. 3. Theoretical and applied issues related to the analysis, design, and implementation of relational database systems. Departmental approval.

COMP 6200/6206 THEORETICAL COMPUTER SCIENCE (3) LEC. 3. The nature of the recursive sets and recursively enumerable sets. Decidability. Context-sensitive grammars, and linear-bounded automata, including closure properties; oracles; reduction; the arithmetic hierarchy; the analytic hierarchy. Departmental approval.

COMP 6210/6216 COMPILER CONSTRUCTION (3) LEC. 3. Compiler organization; lexical analysis; parsing; syntax- direction translation; symbol tables; basic dependence analysis; intermediate forms; interpreters vs. compilers; run-time storage management; code generation; error detection and recovery. Departmental approval.

COMP 6220/6226 ADVANCED TOPICS IN PROGRAMMING LANGUAGES (3) LEC. 3. Advanced topics in programming language concepts, design, and implementation. Departmental approval.

COMP 6230/6236 DECLARATIVE PROGRAMMING LANGUAGES AND PRINCIPLES (3) LEC. 3. Functional and logic programming theoretical foundations, models and implementation issues; example language studies. Departmental approval.

COMP 6280/6286 OBJECT ORIENTED PROGRAMMING LANGUAGES AND PRINCIPLES (3) LEC. 3. Object oriented language principles and study of the language support for these principles. Example languages distributed object programming principles. Departmental approval.

COMP 6320/6326 DESIGN AND ANALYSIS OF COMPUTER NETWORKS (3) LEC. 3. Computer networks design, including multiplexing, switching, routing, internetworking, transport protocols, congestion control, and performance evaluation. Departmental approval.

COMP 6330/6336 PARALLEL AND DISTRIBUTED COMPUTING (3) LEC. 3. Overview of hardware and software issues in parallel systems: fundamental parallel architectures, programming languages, tools and algorithms, parallel applications. Departmental approval.

COMP 6340/6346 NETWORK QUALITY ASSURANCE AND SIMULATION (3) LEC. 3. Theoretical and practical aspects of network simulation and quality assurance. departmental approval.

COMP 6350/6356 DIGITAL FORENSICS (3) LEC. 3. Pr., COMP 2710 or ISMN 3080. Departmental approval. Computer compromise and forensics, with focus on computer crime and ways to uncover, protect, and exploit digital evidence.

COMP 6360/6366 WIRELESS AND MOBILE NETWORKS (3) LEC. 3. Mobile IP, wireless routing, location management, ad-hoc wireless networks, wireless TCP personal communication systems, and GSM. Departmental approval.

COMP 6370/6376 COMPUTER AND NETWORK SECURITY (3) LEC. 3. Fundamentals of computer security. Access Control. Authentication. Digital signatures and watermarks. Modeling and performance assessment. Viruses and worms. Identification of avenues for compromising systems. Departmental approval.

COMP 6380/6386 PERSONAL AREA NETWORKS (3) LEC. 3. Fundamentals of very low power, short-range high-bandwidth personal network technologies such as Bluetooth and direct diffusion. Departmental approval.

COMP 6390/6396 3G AND 4G WIRELESS (3) LEC. 3. Pr., P/C, COMP 6360 or COMP 6366 or P/C, ELEC 6110 or ELEC 6116. Exploration of technology types, design issues for handset and network systems, economics. Exploration of standards such as CT2, CT3, IS-91A. Future challenges for 4G. Departmental approval.

COMP 6400/6406 FUNDAMENTALS OF COMPUTER GRAPHICS (3) LEC. 3. Graphics hardware and software components, coordinate systems, 2-D and 3-D transformations, 3-D viewing and projection, clipping and windowing, scan conversion and algorithms, visibility determination and shadowing, and software projects using a graphics software package. Departmental approval.

COMP 6500/6506 DISTRIBUTED OPERATING SYSTEMS (3) LEC. 3. Basic concepts of distributed systems. Concurrent process communication and synchronization mechanisms, distributed process scheduling, distributed file systems, distributed shared memory, distributed system security and case studies. Departmental approval.

COMP 6510/6516 NETWORKED MULTIMEDIA SYSTEMS (3) LEC. 3. Basic concepts, architecture and design of networked multimedia systems. Departmental approval.

COMP 6520/6526 NETWORK AND OPERATING SYSTEM ADMINISTRATION (3) LEC. 3. Studies of the installation, configuration and management of traditional, distributed and networked system software. Network integration of different systems. Performance monitoring, safety and security issues together with policies, politics and the laws regarding system software management. Departmental approval.

COMP 6600/6606 ARTIFICIAL INTELLIGENCE (3) LEC. 3. Introduction to intelligent agents, search knowledge representation and reasoning, machine learning. Departmental approval.

COMP 6610/6616 ARTIFICIAL INTELLIGENCE PROGRAMMING (3) LEC. 3. Pr., COMP 6600. Design and implementation of advanced artificial intelligence techniques including expert systems, planning, logic and constraint programming, knowledge representation and heuristic search methods. Departmental approval.

COMP 6620/6626 USER INTERFACE DESIGN AND EVALUATION (3) LEC. 3. Theory and practice of designing interfaces for interactive systems, usability engineering techniques; implementing and evaluating interfaces. Departmental approval.

COMP 6640/6646 INTELLIGENT AND INTERACTIVE SYSTEMS (3) LEC. 3. Pr., COMP 3270. Theory and design of intelligent and interactive software; treatments of intelligent agents and human-computer interaction.

COMP 6700/6706 SOFTWARE PROCESS (3) LEC. 3. Process models of the software life cycle as well as methods and tools for software development. Departmental approval.

COMP 6710/6716 SOFTWARE QUALITY ASSURANCE (3) LEC. 3. Processes, methods, and tools associated with the production of robust, high-quality software. Departmental approval.

COMP 6720/6726 REAL TIME AND EMBEDDED SYSTEMS 125 (3) LEC. 3. Concepts of real-time and embedded computer systems. Studies of real-time algorithm issues such as timeliness, time-constrained scheduling and communication. Embedded system issues such as limited memory, low power, and high latency communication. Fall, Spring. Departmental approval.

COMP 7120/7126 DATABASE SYSTEMS II (3) LEC. 3. Pr., COMP 6120 or COMP 6126. Theoretical and applied issues related to the analysis, design, and implementation of object-oriented database systems. Departmental approval.

COMP 7210/7216 ADVANCED COMPILER DESIGN (3) LEC. 3. Pr., COMP 6210 or COMP 6216. Optimizing compilers, dependence analysis, parallelizing compilers. Compilation for non-imperative languages. Compiling object-oriented languages. Departmental approval.

COMP 7220/7226 PROGRAMMING LANGUAGE DESIGN AND SPECIFICATIONS (3) LEC. 3. Pr., COMP 6220. Issues related to programming language design. Lambda calculus as a formalism for specification. Predicate logic. Higher-order logics. Completeness and consistency. Data representations issues. Translation: interpretation vs. compilation. Type theory. Departmental approval.

COMP 7270/7276 ADVANCED TOPICS IN ALGORITHMS (3) LEC. 3. In-depth study of advanced topics in algorithms. Departmental approval.

COMP 7280/7286 PROGRAMMING LANGUAGE SEMANTICS (3) LEC. 3. Pr., COMP 6220 or COMP 6226. Survey of techniques for programming language semantic specification. Hoare triples. Axiomatic semantics. Structural operational semantics. Domain theory. Denotational semantics of a functional language. Denotational semantics of imperative languages. Lambda calculus. Departmental approval.

COMP 7300/7306 ADVANCED COMPUTER ARCHITECTURE (3) LEC. 3. Modern instruction level parallel computer design, including superscalar and very-long instruction word processor design. Departmental approval.

COMP 7310/7316 VLSI CAD TOOL DESIGN (3) LEC. 3. Pr., COMP 6210. Design of CAD tools for VLSI design, including high-level synthesis and hardware-software co-design, logic synthesis, floor planning, optimization, placement and routing. Software development of a CAD tool as a comprehensive project. Departmental approval.

COMP 7320/7326 ADVANCED COMPUTER NETWORKS (3) LEC. 3. Pr., COMP 6320 or COMP 6326. Advanced network topics, including ISDN, ATM, active networks, security, Internet, wireless and mobile networks, and network management. Departmental approval.

COMP 7330/7336 TOPICS IN PARALLEL AND DISTRIBUTED COMPUTING (3) LEC. 3. Pr., COMP 6330 or COMP 6336. Parallel programming languages, environments and tools, parallel algorithms performance issues, distributed memory systems, group communication, fault tolerance. Departmental approval.

COMP 7340/7346 HIGH SPEED NETWORKS (3) LEC. 3. Pr., COMP 6320 or COMP 6326. High-speed networks design, including ATM and gigabit Ethernet, quality of service, ATM traffic, congestion control ATM switching, and signaling. Departmental approval.

COMP 7350/7356 MULTIMEDIA NETWORKING (3) LEC. 3. Pr., COMP 6320 or COMP 6326. Multimedia network requirements, coding, compression, multicast, traffic shaping and analysis, quality of service, scheduling, buffer design and congestion control. Departmental approval.

COMP 7360/7366 WIRELESS AND MOBILE NETWORKS (3) LEC. 3. Pr., COMP 6320 or COMP 6326. Mobile IP, wireless routing, location management, ad-hoc wireless networks, wireless TCP, personal communication systems, and GSM. Departmental approval.

COMP 7370/7376 ADVANCED COMPUTER AND NETWORK SECURITY (3) LEC. 3. Pr., COMP 6370 or COMP 6376. Advanced, research-based examination of computer network attack and defense techniques, viruses and other malware; operating system vulnerabilities and safeguards. Departmental approval.

COMP 7400/7406 ADVANCED COMPUTER GRAPHICS (3) LEC. 3. Pr., COMP 6400 or COMP 6406. Advanced 3-D topics including visual realism issues, visible surface determination algorithms, illumination and shading models, surface and solid modeling, advanced modeling techniques, special purpose graphics architectures, and animation. Software projects will be assigned. Departmental approval.

COMP 7440 SIMULATION OF COMPUTER NETWORKS (3) LEC. 3. Research-based examination of network simulation, including TCP/IP networks, wireless networks and verification and validation of a network simulation. Departmental approval.

COMP 7500/7506 ADVANCED TOPICS IN OPERATING SYSTEMS (3) LEC. 3. Pr., COMP 6500 or COMP 6506. Advanced topics in operating system concepts, design and implementation. Departmental approval.

COMP 7600/7606 COMPUTATIONAL INTELLIGENCE (3) LEC. 3. Pr., COMP 6600 or COMP 6606. A study of computational intelligence with emphasis on the design and implementation of neural, genetic and fuzzy computing techniques. Departmental approval.

COMP 7610/7616 COMPUTATIONAL COGNITION (3) LEC. 3. Pr., COMP 6600 or COMP 6606. Computational models of cognition, including knowledge representations and process mechanisms like means-ends analysis, semantic networks, frames. Departmental approval.

COMP 7620/7626 HUMAN-COMPUTER INTERACTION (3) LEC. 3. Coreq., COMP 6620. Theoretical principles and practical aspects of interaction between humans and computers, design and evaluation of interactive systems. Departmental approval.

COMP 7700/7706 SOFTWARE ARCHITECTURE (3) LEC. 3. Pr., (COMP 6700 or COMP 6706) and (COMP 6710 or COMP 6716). Methods and tools related to the analysis, specification and design of software architecture. Departmental approval.

COMP 7710/7716 SOFTWARE ENVIRONMENTS (3) LEC. 3. Pr., (COMP 6700 or COMP 6706) and (COMP 6710 or COMP 6716). Issues associated with the design, implementation, and use of software engineering environments. Departmental approval.

COMP 7720/7726 SOFTWARE RE-ENGINEERING (3) LEC. 3. Pr., (COMP 6700 or COMP 6706) and (COMP 6710 or COMP 6716). Process, methods and tools associated with re-engineering software systems. Departmental approval.

COMP 7730/7736 FORMAL METHODS FOR SOFTWARE (3) LEC. 3. Pr., (COMP 6700 or COMP 6706) and (COMP 6710 or COMP 6716). Precise, abstract models for characterizing and reasoning about properties of software systems. Departmental approval.

COMP 7740 AGENT-DIRECTED SIMULATION (3) LEC. 3. Pr., COMP 6700 or COMP 6706. Covers entire simulation software development life cycle including problem formulation, system and objectives definition, conceptual modeling, model design, implementation, analysis of simulation data, and credibility assessment including verification and validation. Special emphasis is given to modeling aspects using agent-directed simulation methodology. Departmental approval.

COMP 7930 DIRECTED STUDY (1-3) IND. Departmental approval. Course may be repeated with change in topics.

COMP 7950/7956 INTRODUCTION TO GRADUATE STUDY IN COMPUTER SCIENCE AND SOFTWARE ENGINEERING (1) LEC. 1. SU. Introduction to graduate research and study topics in computer science and software engineering.

COMP 7970/7976 SPECIAL TOPICS (1-3) LEC. Course may be repeated with change in topics.

COMP 7980/7986 MASTER OF SOFTWARE ENGINEERING DESIGN PROJECT (1-15) IND. SU. Planning, implementation, and completion of a design project. Project culminates in both a written report and an oral presentation. Course may be repeated with change in topics.

COMP 7990 RESEARCH AND THESIS (1-15) MST. Course may be repeated with change in topics.

COMP 8120 CURRENT TOPICS IN DATABASE SYSTEMS (3) LEC. 3. Pr., COMP 6120 or COMP 6126. Theoretical and applied research issues related to database systems. Topics will reflect current research in the field. Departmental approval.

COMP 8220 RESEARCH TOPICS IN PROGRAMMING LANGUAGES (3) LEC. 3. Pr., COMP 7220 or COMP 7226. Topics of current research in the area of programming languages, their design, and implementation. Departmental approval.

COMP 8320/8326 RESEARCH TOPICS IN COMPUTER NETWORKS (3) LEC. 3. Pr., COMP 6320 or COMP 6326. Current research in wireless and mobile networks, high-speed networks, active networks, WDM networks, and performance modeling. Departmental approval.

COMP 8330 ADVANCED TOPICS IN PARALLEL AND DISTRIBUTED COMPUTING (3) LEC. 3. Pr., COMP 6330 or COMP 6336.Parallelizing compiler, theory of concurrency, advanced parallel algorithms, load balancing, migration, performance evaluation, distributed architectures. Departmental approval

COMP 8400 CURRENT TOPICS IN COMPUTER GRAPHICS (3) LEC. 3. Pr., COMP 7400 or COMP 7406.In-depth study of current research topics in computer graphics. Topics may include theoretical, performance implementation, and system integration issues. Extensive literature survey, issue identification, performance comparison, and future research trends will be discussed. Departmental approval.

COMP 8500 RESEARCH TOPICS IN OPERATING SYSTEMS (3) LEC. 3. Pr., COMP 7500 or COMP 7506.Topics of current research in the area of operating systems their design, and implementation. Departmental approval.

COMP 8600 ADVANCED TOPICS IN ARTIFICIAL INTELLIGENCE (3) LEC. 3. Pr., COMP 6610 or COMP 6616 or COMP 7600 or COMP 7606 or COMP 7610 or COMP 7616.In-depth study of current research topics in Artificial Intelligence, e.g., reasoning mechanisms, heuristic search methods, cognitive modeling. Departmental approval.

COMP 8620 ADVANCED TOPICS IN HUMAN-COMPUTER INTERACTION (3) LEC. 3. Pr., COMP 7620 or COMP 7626.In-depth study of current research topics in Human- Computer Interaction, e.g., evaluation and assessment methods, multimodal interfaces, educational technology. Departmental approval.

COMP 8700/8706 CURRENT TOPICS IN SOFTWARE ENGINEERING (3) LEC. 3. Pr., (COMP 6700 or COMP 6706) and (COMP 6710 or COMP 6716).Current theoretical and applied research issues in software engineering. Departmental approval.

COMP 8930 DIRECTED STUDY (1-3) IND. Course may be repeated for a maximum of 6 credit hours.

COMP 8970 SPECIAL TOPICS (1-3) IND. Course may be repeated with change in topics.

COMP 8990 RESEARCH AND DISSERTATION (1-15) DSR. Course may be repeated with change in topics.

Consumer Affairs - CAHS

Courses

CAHS 2740 DESIGN COMMUNICATION: CAD AND ILLUSTRATION (4) LEC. 2, LLB/LST. 4. Pr., CAHS 1740.Exploration of computer-aided design software and illustrative techniques that facilitate apparel design and communication during product development in the apparel industry. Departmental approval.

CAHS 3800 CONSUMER DECISION MAKING FOR APPAREL AND FASHION PRODUCTS (3) LEC. 3. Pr., CAHS 2000 or CAHS 2007.Analysis of consumer decision making for apparel and fashion products and the factors that impact consumer decisions. Credit will not be given for both CAHS 3800 and MKTG 3410. 2.0 gapped GPA. AMDP major.

CAHS 4980 UNDERGRADUATE RESEARCH IN CONSUMER AFFAIRS (1-3) IND/LEC. SU. Pr., 3.50 GPA.Departmental approval. Participation as an undergraduate research assistant (URA) for a Consumer Affairs research project under the supervision of a CA faculty member. Course may be repeated for a maximum of 6 credit hours.

CAHS 5850 APPAREL MERCHANDISING AND RETAIL MANAGEMENT (4) LEC. 3. LAB. 2. Pr., CAHS 3850.Problem-solving and decision making strategies for retailing apparel, textiles, and other consumer products. Credit will not be given for both CAHS 5850 and CAHS 6850. 2.0 gapped GPA. AMDP major.

CAHS 6860 ADVANCED RETAIL BUYING AND ACCOUNTABILITY (3) LEC. 2. LAB. 1. Planning, executing and evaluating retail buying to maximize ROI. Course will not be given for both CAHS 5860 and CAHS 6860. Departmental approval.

CAHS 7970 SPECIAL TOPICS IN DESIGN (1-6) RES. (A) Apparel; (B) Interiors; (C) Visual Merchandising; (D) Textile Design. Independent execution of advanced design work hours. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

Consumer and Design Sciences - CADS

Courses

CADS 1000 STUDIO I: INTRODUCTION TO INTERIOR DESIGN (4) LEC. 3, LST. 3. Introduction and application of design theory to interior design and consumer products.

CADS 1100 STUDIO II: TECHNICAL DESIGN OF INTERIOR DESIGN (4) LEC. 2, STU. 6. Space planning and delineation of interior systems for residential, institutional, and other consumer environments.

CADS 1600 TEXTILE INDUSTRIAL COMPLEX (3) LEC. 3. Introduction to the composition, characteristics, and products of the network of fiber producers, textile manufacturers, dyers, finishers, apparel manufacturers, and retailers.

CADS 1740 AESTHETICS FOR DESIGN (3) LEC. 3. Elements and principles of design and their application in industries such as textiles, apparel, and retail.

CADS 2000 GLOBAL CONSUMER CULTURE (3) LEC. 3. Sustainability and social responsibility provide a framework for the study of cultural, commercial, and aesthetic factors influencing the selection and usage of consumer products and services that create and express social identity. Credit will not be given for both CADS 2000 and CADS 2007.

CADS 2007 HONORS GLOBAL CONSUMER CULTURE (3) LEC. 3. Pr., Honors College. Sustainability and social responsibility provide a framework for the study of cultural, commercial, and aesthetic factors influencing the selection and usage of consumer products and services that create and express social identity. Credit will not be given for both CADS 2007 and CADS 2000.

CADS 2100 STUDIO III: VISUAL PRESENTATION OF INTERIOR DESIGN I (4) LEC. 2, LST. 6. Pr., CADS 1100 and CADS 1000. Development of visual communication skills for interior design and consumer products.

CADS 2200 STUDIO IV CAD FOR INDS (4) LEC. 2, LST. 6. Pr., CADS 2100. Application of graphic visualization and computer-aided design techniques to represent interior design.

CADS 2300 HIST OF THE DECORATIVE ARTS (3) LEC. 3. Pr., CADS 1000. And Core Fine Arts. Historical survey of interior design and the decorative arts from antiquity through present.

CADS 2400 INTERIOR MATERIALS AND COMPONENTS (3) LEC. 3. Survey of finishes, textiles, materials, and components. Introduction to health, safety, and environmental issues that impact consumers. Fall.

CADS 2500 STUDIO V: VISUAL PRESENTATIONS II (4) LEC. 2. Pr., CADS 2100. Development of color visual communication skills for interior design ideas and concepts. Spring.

CADS 2700/2703 INTRODUCTION TO NONPROFIT ORGANIZATIONS (3) LEC. 3. Introduction to mission, structure, and impact of nonprofit organizations at the local, state, national and international levels. May count either CADS 2700 or CADS 2703.

CADS 2740 DESIGN COMMUNICATION: CAD AND ILLUSTRATION (4) LEC. 2, LLB/LST. 4. Pr., CADS 1740. Exploration of computer-aided design software and illustrative techniques that facilitate apparel design and communication during product development in the apparel industry. Departmental approval.

CADS 2750 PRODUCT DEVELOPMENT: TECHNICAL DESIGN (4) LEC. 2, LST. 4. Pr., CADS 2740 and CADS 2800. Apparel pattern development through drafting, flat pattern manipulation and draping; custom apparel production.

CADS 2760 VISUAL MERCHANDISING (4) LEC. 2, LST. 6. Pr., CADS 1600. History, equipment, application, and theory of display techniques in store and non-store settings. 2.0 gapped GPA. AMDP major

CADS 2800 APPAREL PRODUCTION MANAGEMENT (4) LEC. 3. LAB. 3. Pr., CADS 1600. Introduction to apparel industry terminology, technology, production methods, and engineering quality into apparel products. 2.0 gapped GPA. AMDP major

CADS 3100 STUDIO VI: LIGHTING DESIGN/ENVIRONMENTAL SYSTEMS (4) LEC. 2, LST. 6. Pr., CADS 2200 and CADS 2400 and CADS 2500. Application of principles and processes of lighting, mechanical, and environmental systems to interior design.

CADS 3200 STUDIO VII: RESIDENTIAL INTERIORS (4) LEC. 2, LST. 6. Pr., CADS 2200 and CADS 2300 and CADS 2400 and CADS 2500. Application of human factors and consumer needs to programming and design process of residential interiors.

CADS 3380 STUD ABRD OPP IN HUMAN SCI (1) LEC. 1. Exploration of study abroad opportunities for students interested in the International Minor in Human Sciences.

CADS 3400 STUDIO VIII: NON-RESIDENTIAL INTERIORS (4) LEC. 2, LST. 6. Pr., CADS 2200 and CADS 2300 and CADS 2400 and CADS 2500 and CADS 3100 and CAHS 3200. Application of programming and presentation techniques to non-residential interior design.

CADS 3500 BUSINESS PRACTICES IN INTERIOR DESIGN (3) LEC. 3. Pr., P/C, CADS 2200 and CADS 2300 and CADS 2400. Professional practices in the design business. Orientation to internship experience.

CADS 3600 TEXTILES (4) LEC. 3. LAB. 3. Pr., CADS 1600 and CHEM 1020 and CHEM 2012. Organic compounds, polymers, fibers, yarns, fabrics, and chemical finishes for apparel and household textiles with laboratory evaluation. 2.0 gapped GPA. AMDP major.

CADS 3700/3703 GENDER, WEALTH AND PHILANTHROPY (3) LEC. 3. Study of wealth and philanthropic theories, principles, and applications as it applies in gender.

CADS 3707 GENDER, WEALTH AND PHILANTHROPY (3) LEC. 3. Pr., Honors College. Study of wealth and philanthropic theories, principles, and applications as it applies in gender.

CADS 3740 ILLUSTRATION TECHNIQUES FOR APPAREL DESIGN (3) LEC. 1, AAB. 4. Pr., CADS 1600 and CADS 2740. Departmental approval. Creative approach to illustrating apparel through the use of varied media and development of illustrative style appropriate for advertising, retail and portfolio presentations.

CADS 3750 PRODUCT DEVELOPMENT: APPAREL DESIGN (4) LEC. 2, LST. 4. Pr., CADS 2750 and CADS 2800 and CADS 2740. Advanced design techniques, including couture production; portfolio and internship planning. 2.0 gapped GPA. ADMP major.

CADS 3800 CONSUMER DECISION MAKING FOR APPAREL AND FASHION PRODUCTS (3) LEC. 3. Pr., CADS 2000 or CADS 2007. Analysis of consumer decision making for apparel and fashion products and the factors that impact consumer decisions. Credit will not be given for both CADS 3800 and MKTG 3410. 2.0 gapped GPA. AMDP major.

CADS 3850 MERCHANDISE PLANNING AND CONTROL (3) LEC. 2. LAB. 2. Pr., COMP 1000 and CADS 1600 and ACCT 2810. Application of principles of merchandise management and retail buying to the retailing of consumer goods and services. 2.0 gapped GPA. AMDP major

CADS 3900 DIRECTED STUDIES (1-3) AAB/IND. SU. Directed readings and/or individualized research project. 2.0 gapped GPA. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CADS 3920 INDUSTRY EXPERIENCE (3) INT. 3. Pr., CADS 1600. Supervised industry experience requiring students to spend time working in the industry under supervision. 2.0 GPA. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CADS 3940 STUDY AND TRAVEL IN CONSUMER AFFAIRS (1-3) AAB/FLD. Concentrated study in the U.S. or abroad. 2.0 gapped GPA. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CADS 3970 SPECIAL TOPICS (1-3) AAB. Departmental approval.

CADS 4200 STUDIO IX: PORTFOLIO DEVELOPMENT (3) STU. 5. Pr., CADS 3400 and CADS 3500. Portfolio development, critique, and review.

CADS 4500 PORTFOLIO DEVELOPMENT FOR DESIGNERS (4) LEC. 2, LST. 4. Pr., P/C, CADS 3750. Survey of advanced techniques in design presentation including computer-aided design and graphics software. Portfolio development in print, computer slide show, and web formats. Open to AMDP majors in Apparel Design Option.

CADS 4750 PRODUCT DEVELOPMENT: SPECIALIZED DESIGN (3) STU. 6. Pr., CADS 3750. Specialized design development concepts, techniques, and applications for target markets including children's wear, performance wear, and bridal markets.

CADS 4800 APPAREL ENGINEERING (4) LEC. 3. LAB. 3. Pr., CADS 2800. Planning and problem solving throughout the apparel production process, including methods engineering, time study, costing, CAD. 2.0 gapped GPA. AMDP major.

CADS 4900 UNDERGRADUATE TEACHING ASSISTANT EXPERIENCE (1-3) LEC/LST. Student must have previously earned an "A" in the course s/he is assisting with and departmental approval. Student participation as an undergraduate teaching assistant (UTA) for the Consumer Affairs course under the supervision of a faculty member. Course may be repeated for a maximum of 6 credit hours.

CADS 4910 PRACTICUM IN PHILANTHROPY AND NONPROFIT ORGANS (3) PRA. 3. Pr., (CADS 2700 or CADS 2703) or (CAHS 3700 or CAHS 3703 or CAHS 3707). Supervised practicum experience with a philanthropic or nonprofit organization. Departmental approval.

CADS 4920 INTERNSHIP (8) AAB/INT. 8. Supervised 10 week professional internship. Departmental approval. 2.0 gapped GPA.

CADS 4960 SPECIAL PROBLEMS IN DESIGN (1-3) LEC. A) Apparel, B) Interior Design, C) Visual Merchandising, D) Textile Design. Creative solution of design problems. 2.0 gapped GPA. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

CADS 4967 HONORS SPECIAL PROBLEMS (1-3) IND. SU. Pr., Honors College. Readings in specialized topics. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CADS 4980 UNDERGRADUATE RESEARCH IN CONSUMER AFFAIRS (1-3) IND/LEC. SU. Pr., 3.50 GPA. Departmental approval. Participation as an undergraduate research assistant (URA) for a Consumer Affairs and Design Sciences research project under the supervision of a CADS faculty member. Course may be repeated for a maximum of 6 credit hours.

CADS 4997 HONORS THESIS (3) IND. 3. SU. Pr., Honors College. CADS 4967. Research in specialized topics. Departmental approval.

CADS 5300 STUDIO X: HOSPITALITY DESIGN (4) LEC. 2. LAB. 6. Development of a large scale hospitality project with emphasis on design of environments that serve the needs of multiple users. Credit may only be used for CADS 5300 or CADS 6300.

CADS 5400 STUDIO XI: HEALTH CARE DESIGN (4) LEC. 2. LAB. 6. Pr., CADS 5300. Development of a large scale institutional project with emphasis on design of a healing environment. Credit may only be used for CADS 5400 or CADS 6400.

CADS 5450 HISTORY OF COSTUME (3) LEC. 3. Core History or departmental approval. 2.0 gapped GPA. AMDP major. Historical roles of dress in western civilization. Cultural, social, and physical evolution. Credit will not be given for both CADS 5450 and CADS 6450.

CADS 5460 FASHION INDUSTRY SINCE 1910 (3) LEC. 3. Fashion history, designers and businesses from 1910 to the present. May count either CADS 5460/CADS 6460. P/C; Core History, Core Literature or departmental approval.

CADS 5500 PROFESSIONAL DEVELOPMENT: MERCHANDISING PORTFOLIO (3) LEC. 3. Pr., P/C, CADS 5850. Portfolio Development in print, digital, and web formats for merchandising students. May count either CADS 5500 or CADS 6500.

CADS 5600 GLOBAL SOURCING IN TEXTILES AND APPAREL (3) LEC. 3. Pr., (ECON 2020 or ECON 2027) and (ANTH 1000 or GEOG 1010 or PSYC 2010 or SOCY 1000 or SOCY 1007)., Or departmental approval. The role of fiber, textile, and apparel industries in the international economy. 2.0 gapped GPA. AMDP major.

CADS 5610 GLOBAL RETAILING STRATEGIES FOR TEXTILE AND APPAREL PRODUCTS (3) LEC. 3. Pr., (CADS 2000 or CADS 2007) and CADS 3850. Strategies for successful global business expansion for textile and apparel retailers. Credit granted for only one of: CADS 5610, CADS 6610, MKTG 4330.

CADS 5650 TEXTILE AND APPAREL EVALUATION (4) LEC. 2. LAB. 6. Pr., CADS 3600. Testing procedures for characterization and evaluation of fabrics and sewn products for apparel and interiors. Credit will not be given for both CADS 5650 and CADS 6650. 2.0 gapped GPA. AMDP major.

CADS 5700 ENTREPRENEURSHIP IN APPAREL AND INTERIORS (3) LEC. 3. Analyzing business opportunities in textiles, apparel, and interiors; developing marketing concepts and entrance strategies. Credit will not be given for both CADS 5700 and CADS 6700. Departmental approval.

CADS 5730 HISTORY OF TEXTILES (3) LEC. 3. Cultural, economic, material, technological, and aesthetic perspectives on the evolution of textiles. Credit will not be given for both CAHS 5730 and CAHS 6730. Pr., be given for both CAHS 5730 and CAHS 6730. Pr.,

CADS 5750 APPAREL LINE DEVELOPMENT (4) LEC. 2. LAB. 6. Pr., CADS 3750 or CADS 3750 or CADS 4800. Team driven design, production, and market research. Development of apparel lines. Credit will not be given for both CADS 5750 and CADS 6750. Spring. Departmental approval. 2.0 gapped GPA. AMDP major.

CADS 5760 FASHION ANALYSIS AND FORECASTING (3) LEC. 3. Pr., CADS 1600 and (CADS 2740 or CADS 2760). Theories explaining fashion dynamics and techniques for forecasting change, with case applications in textiles, apparel, and retailing. Credit will not be given for both CADS 5760 and CADS 6760. Or departmental approval. 2.0 gapped GPA. AMDP major

CADS 5850 APPAREL MERCHANDISING AND RETAIL MANAGEMENT (4) LEC. 3. LAB. 2. Problem-solving and decision making strategies for retailing apparel, textiles, and other consumer products. Credit will not be given for both CADS 5850 and CADS 6850. 2.0 gapped GPA. AMDP major.

CADS 5860 ADVANCED RETAIL BUYING (3) LEC. 2. LAB. 1. Pr., CADS 5850. Planning, executing and evaluating retail buying to maximize ROI. 2.0 gapped GPA or departmental approval. Credit will not be given for both CADS 5860 and CADS 6860.

CADS 6300 STUDIO X: HOSPITALITY DESIGN (4) LEC. 2. LAB. 6. Development of a large scale hospitality project with emphasis on design of environments that serve the needs of multiple and users. Credit may only be used for CADS 5300 or CADS 6300.

CADS 6400 STUDIO XI: HEALTH CARE DESIGN (4) LEC. 2. LAB. 6. Pr., CADS 6300. Development of a large scale institutional project with emphasis on design of a healing environment. Credit may only be used for CADS 5400 or CADS 6400.

CADS 6450 HISTORY OF COSTUME (3) LEC. 3. Historical roles of dress in western civilization. Cultural, social, and physical evolution. Credit will not be given for both CADS 6450 and CADS 5450. Departmental approval.

CADS 6460 FASHION INDUSTRY SINCE 1910 (3) LEC. 3. Fashion history, designers and businesses from 1910 to the present. May count either CADS 5460/CADS 6460. Core History, Core Literature or departmental approval.

CADS 6500 PROFESSIONAL DEVELOPMENT: MERCHANDISING PORTFOLIO (3) LEC. 3. Pr., CADS 5850. Portfolio Development in print, digital, and web formats for merchandising students. May count either CADS 5500 or CADS 6500.

CADS 6600 GLOBAL SOURCING IN TEXTILES AND APPAREL (3) LEC. 3. The role of fiber, textile, and apparel industries in the international economy. Credit will not be given for both CADS 5600 and CADS 6600. Graduate standing. Departmental approval.

CADS 6610/6616 GLOBAL RETAILING STRATEGIES FOR TEXTILE AND APPAREL PRODUCTS (3) LEC. 3. Strategies for successful global business expansion for textile and apparel retailers. Credit given for only one of: CADS 5610, CADS 6610, MKTG 4330. Departmental approval.

CADS 6650 TEXTILE AND APPAREL EVALUATION (4) LEC. 2. LAB. 6. Pr., CADS 3600. Testing procedures for characterization and evaluation of fabrics and sewn products for apparel and interiors. Credit will not be given for both CADS 5650 and CADS 6650. Spring. Departmental approval.

CADS 6700 ENTREPRENEURSHIP IN APPAREL AND INTERIORS (3) LEC. 3. Analyzing business opportunities in textiles, apparel, and interiors; developing marketing concepts and entrance strategies. Credit will not be given for both CADS 5700 and CADS 6700. Departmental approval.

CADS 6730 HISTORY OF TEXTILES (3) LEC. 3. Cultural, economic, material, technological, and aesthetic perspectives on the evolution of textiles. Credit will not be given for both CADS 5730 and CADS 6730. Departmental approval.

CADS 6750 APPAREL LINE DEVELOPMENT (4) LEC. 2. LAB. 6. Team-driven design, production, and market research. Development of apparel lines. Credit will not be given for both CADS 5750 and CADS 6750. Departmental approval. Graduate standing.

CADS 6760/6766 FASHION ANALYSIS AND FORECASTING (3) LEC. 3. Theories explaining fashion dynamics and techniques for forecasting change with case applications in textiles, apparel, and retailing. Credit will not be given for both CADS 6760 and CADS 5760. Departmental approval. Graduate standing. Fall.

CADS 6850 APPAREL MERCHANDISING AND RETAIL MANAGEMENT (4) LEC. 3. LAB. 2. Problem-solving and decision making strategies for retailing, apparel, textiles, and other consumer products. Credit will not be given for both CADS 6850 and CADS 5850. Departmental approval. Graduate standing.

CADS 6860 ADVANCED RETAIL BUYING (3) LEC. 2. LAB. 1. Planning, executing and evaluating retail buying to maximize ROI. Credit will not be given for both CADS 5860 and CADS 6860. Departmental approval.

CADS 7040 PROTOCOL FOR GRADUATE STUDY (1) LEC. 1. SU. Introduction to policies, practices, and expectations for successful completion of the graduate degree.

CADS 7050 RESEARCH METHODS IN CONSUMER AND DESIGN SCIENCES (3) LEC. 3. Pr., Completed one course from STAT 6000-8999 or ERMA 7300. Research and investigation methods appropriate to the study of consumer and textile design sciences. Departmental approval.

CADS 7060 SURVEY OF CONSUMER AND DESIGN SCIENCES RESEARCH (3) LEC. 3. Presentation and discussion of a broad array of research topics to support literature review development.

CADS 7100 ENVIRO DES THEORIES AND APPS (3) LEC. 3. Pr., CADS 5400. Theories, methodologies, and current issues relevant to interior design; sociological, psychological, ecological, and post-modern perspectives. Departmental approval.

CADS 7200 AESTHETICS THEORY IN CONSUMER AND DESIGN SCIENCES (3) LEC. 3. Pr., CADS 7050. Review of theories of aesthetics focusing on aesthetic experience and response as a function of object, perceiver, and situational properties. Departmental approval.

CADS 7530 ECONOMICS OF APPAREL AND TEXTILES (3) LEC. 3. Pr., ECON 2020 or ECON 2027. Economic issues involving the manufacture, distribution, and consumption of textiles and apparel. Departmental approval.

CADS 7670 SOCIAL PSYCHOLOGICAL THEORIES IN CLOTHING BEHAVIOR (3) LEC. 3. Pr., CADS 7050. Clothing as a factor in the physical, social, and psychological environment; response to and use of clothing in social behavior. Departmental approval.

CADS 7690 CONSUMER THEORY IN APPAREL AND INTERIORS (3) LEC. 3. Pr., CADS 7050. Overview of various theories used in consumer research with an emphasis on their application in apparel, merchandising, design, and interiors. Departmental approval.

CADS 7900 DIRECTED STUDIES (1-3) IND. SU. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CADS 7910 SUPERVISED TEACHING IN CONSUMER AFFAIRS (1) AAB/IND. 1. SU. Practical experience teaching in the classroom. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CADS 7920 GRADUATE INTERNSHIP (3) INT. 3. Supervised professional experience in the United States or internationally. Departmental approval.

CADS 7930 ADVANCED DESIGN PROJECTS (1-6) IND. SU. Independent execution of advanced design work. (A) Apparel; (B) Interiors; (C) Visual Merchandising; (D) Textile Design. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CADS 7940 STUDY/TRAVEL IN CONSUMER AFFAIRS (1-3) FLD. SU. Concentrated study/travel in the U.S. or internationally. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CADS 7950 SEMINAR (1) SEM. 1. SU. Research presentations and discussion. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CADS 7960 SPECIAL PROBLEMS (1-3) IND. SU. Directed readings in textiles, apparel, interiors and retailing. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CADS 7970 SPECIAL TOPICS IN DESIGN (1-6) RES. (A) Apparel; (B) Interiors; (C) Visual Merchandising; (D) Textile Design. Independent execution of advanced design work. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CADS 7980 GRADUATE PROJECT (1-3) RES. In-depth, integrative research in a particular project related to apparel, textiles, interiors or consumer behavior. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CADS 7990 RESEARCH AND THESIS (1-10) AAB/MST. Departmental approval. Course may be repeated with change in topics.

CADS 8100 APPAREL AND INTERIORS BRANDING (3) LEC. 3. Pr., CADS 7050. Critical examination of theories and methodological issues in branding research and application in apparel and interior product and service branding. Departmental approval.

CADS 8950 INDUSTRY ISSUES SEMINAR (1) LEC. 1. SU. Research presentations and discussions on issues facing the global textile industrial complex. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CADS 8960 CURRENT ISSUES IN INTEGRATED TEXTILE AND APPAREL SCIENCE (2) LEC. 2. Directed readings on current issues in the global textile industrial complex. Spring. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CADS 8970/8976 SPECIAL TOPICS (1-3) LEC. Topics related to various aspects of the integrated textile and apparel complex. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

CADS 8990 RESEARCH AND DISSERTATION (1-10) DSR. Departmental approval. Course may be repeated with change in topics.

Cooperative Education - COOP

Courses

COOP 4920 COOPERATIVE WORK EXPERIENCE (0) PRA. A practical, professional, full-time, curriculum-related work experience in industry, business, or government. Under joint supervision of employer and university. Departmental approval.

Counselor Ed, Counseling P - COUN

Courses

COUN 1000 CAREER ORIENTATION EXPLORATION (2) LEC. 1. LAB. 2. The process of career decision-making through hands-on activities, in-class exercises, and job shadowing.

COUN 2900 DIRECTED STUDIES (1-3) IND. SU. Reading, research, or other work undertaken by a student focused on an area of special interest. Directed by faculty member. Course may be repeated for a maximum of 9 credit hours.

COUN 2940 DIRECTED FIELD EXPERIENCE (1-3) FLD. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

COUN 2970 SPECIAL TOPICS IN COLLEGE STUDENT DEVELOPMENT (1-3) LEC. Selected topics in college student development. Fall, Spring. Course may be repeated for a maximum of 12 credit hours.

COUN 3100 COUNSELING AND HUMAN SERVICES (3) LEC. 3. Counseling concepts and skills appropriate in the helping professions. Not open to graduate students in counseling education.

COUN 7100 INTRODUCTION TO SCHOOL PSYCHOLOGY (3) LEC. 3. Orientation to profession of school psychology; history of the profession, professional roles, ethical and legal standards, and current issues.

COUN 7200 INTRODUCTION TO MEASUREMENT AND ASSESSMENT (3) LEC. 3. Pr., COUN 7100 or COUN 7400 or COUN 8530. Introduction to the history and theory of measurement and assessment as it applies to counselors and psychologists.

COUN 7210 APPRAISAL IN COUNSELING AND PSYCHOLOGY (3) LEC. 3. Pr., COUN 7200 and COUN 7350. Development, administration, scoring and interpretation of personality, interest, aptitude, achievement, attitude tests. Includes assessment interview, behavioral observation.

COUN 7220 INTELLECTUAL ASSESSMENT OF CHILDREN AND ADOLESCENTS (3) LEC. 3. Pr., COUN 7200. Theory and measurement of children's intelligence. Administration and interpretation of selected tests.

COUN 7230 CAREER DEVELOPMENT AND VOCATIONAL APPRAISAL (3) LEC. 3. Pr., COUN 7100 or COUN 7200. Career development theories appraising vocationally related interests, aptitudes, and personal characteristics. Laboratory practice in test procedures.

COUN 7250 ADVANCED ASSESSMENT AND DIAGNOSIS IN COUNSELING (3) LEC. 3. Pr., COUN 7100 or COUN 7400 or COUN 8530. Assessment/diagnostic skills related to counseling: intake, assessment, diagnostic criteria, treatment planning, counseling interventions.

COUN 7310 COUNSELING APPLICATIONS OF LIFESPAN DEVELOPMENT (3) LEC. 3. Theories and current research in development across the lifespan with emphasis on applications to counseling.

COUN 7320/7326 COUNSELING THEORIES (3) LEC. 3. Pr., COUN 7100 or COUN 7400 or COUN 8530. Study of major counseling theories. May count either COUN 7320 or COUN 7326.

COUN 7330 COUNSELING DIVERSE POPULATIONS (3) LEC. 3. Special counseling and advocacy issues. Needs of diverse populations are considered. Departmental approval.

COUN 7340 GROUP COUNSELING (3) LEC. 3. Pr., (COUN 7320 or COUN 7326) and COUN 7350. Leading, developing, evaluating a counseling group; including group proposal, session development, group dynamics, group leadership and evaluation, treatment planning; group intervention, counseling skills.

COUN 7350 INTRODUCTION TO COUNSELING PRACTICE (3) LEC. 3. SU. Pr., (COUN 7320 or COUN 7326) or COUN 7400 or COUN 8530. Methods, interventions, and skills essential to counseling.

COUN 7400 ORIENTATION TO PROFESSIONAL COUNSELING (3) LEC. 3. Orientation to the counseling field with emphasis on philosophical, historical, psychological, and organizational foundations of professional practice.

COUN 7410 ORIENTATION TO CLINICAL MENTAL HEALTH COUNSELING (3) LEC. 3. Orientation to clinical mental health counseling to include roles, responsibilities, systems, theories, professional issues, and history.

COUN 7420 ORIENTATION TO SCHOOL COUNSEL (3) LEC. 3. Orientation to the role and activities of the K-12 school counselor. Emphasis on the components of a developmentally-oriented school counseling program.

COUN 7430 COLLEGE STUDENT DEVELOPMENT (3) LEC. 3. Theory and practice of counseling and student services in higher education.

COUN 7500 CRISIS INTERVENTION IN COUNSELING (3) LEC. 3. Development of skills and knowledge for crisis intervention and management in counseling, including prevention planning, intervention strategies and evaluation.

COUN 7510 ADVANCED CLINICAL MENTAL HEALTH COUNSELING INTERVENTIONS (3) LEC. 3. Pr., COUN 7320. Advanced counseling interventions, practices, techniques and methods for mental health counselors, including treatment planning, counseling processes, and evaluation.

COUN 7810 COUNSELING CONSULTATION THEORY AND PRACTICE (3) LEC. 3. Counseling consultation theories, models, practices, legal and ethical standards, and interdisciplinary approaches in school and clinical mental health settings.

COUN 7820 PSYCHOEDUCATIONAL INTERVENTIONS: ACADEMIC (3) LEC. 3. Pr., COUN 7100 and COUN 7220. Intervention approaches designed to address children's academic success across all content areas including: reading, mathematics, written language and other academic enablers.

COUN 7900 DIRECTED STUDIES (1-3) IND. SU. Independent learning effort directed at desired objectives. Includes evaluation by professor and student at regular intervals. Course may be repeated for a maximum of 9 credit hours.

COUN 7910 PRACTICUM (3) LEC. 3. SU. Supervised experiences appropriate to student's program emphasis area. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

COUN 7920 INTERNSHIP (1-9) INT. SU. Pr., COUN 7910. Supervised on-the-job experiences. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

COUN 7940 DIRECTED FIELD EXPERIENCE (1-10) FLD. SU. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

COUN 7960 SPECIAL PROBLEMS (1-10) IND. SU. May be taken more than one semester. Course may be repeated for a maximum of 10 credit hours.

COUN 7970 SPECIAL TOPICS (1-3) AAB. An in-depth study of a current topic(s) impacting the professions related to departmental programs.

COUN 7990 RESEARCH AND THESIS (1-10) MST. Course may be repeated with a change in topic. Course may be repeated with change in topics.

COUN 8100 PERSONALITY AND INDIVIDUAL DIFFERENCES (3) LEC. 3. Origins and structure of individual differences in personality and intelligence, and their application to counseling.

COUN 8110 COUNSELING ASSESSMENT ACROSS THE LIFESPAN (3) LEC. 3. Development, administration, scoring and interpretation of personality, interest, aptitude, achievement, and attitude tests across the lifespan.

COUN 8200 INTELLECTUAL ASSESSMENT OF ADULTS (3) LEC. 2. LAB. 3. Pr., COUN 7200. Theory and measurement of adult intelligence. Administration and interpretation of selected tests.

COUN 8300 RESEARCH DESIGN IN COUNSELING AND EVALUATION (3) LEC. 3. Methods for counseling research design. Studies, experimental, quasi-experimental, non-experimental, survey, between subjects and within subjects. Departmental approval.

COUN 8400 PROFESSIONAL SEMINAR COUNSELING PSYCHOLOGY (1-3) LEC. Scientific foundations of the counseling psychology profession and application of that foundational knowledge in counseling interventions. Course may be repeated for a maximum of 9 credit hours.

COUN 8510 CONTEMPORARY ISSUES IN COUNSELOR EDUCATION (3) LEC. 3. History, development, current issues. Philosophical assumptions, legal and ethical considerations, new research service initiatives. Departmental approval.

COUN 8520 CONTEMPORARY ISSUES IN SCHOOL PSYCHOLOGY (1-3) LEC. History, development, and current issues. Legal and ethical considerations, research and service initiatives, and new client populations. Course may be repeated for a maximum of 3 credit hours.

COUN 8530 CONTEMPORARY ISSUES IN COUNSELING PSYCHOLOGY (3) LEC. 3. History, development, and current professional issues. Philosophical and cultural assumptions, legal and ethical considerations, and current research topics.

COUN 8540 COUN SUPERVISION-THEORY & PRAC (3) LEC. 3. Advanced theories, skills, models and methods used in counseling supervision including counselor development, supervisory processes and evaluation.

COUN 8610 ADVANCED THEORIES: EXISTENTIAL/HUMANISTIC (3) LEC. 3. Theory and practice of humanistic/existential approaches to individual and group therapy.

COUN 8620 ADVANCED THEORIES: COGNITIVE/BEHAVIORAL THEORIES (3) LEC. 3. Current cognitive/behavioral models for understanding human problems and behavior change.

COUN 8630 ADVANCED THEORIES: PSYCHODYNAMIC THEORIES (3) LEC. 3. The origins, current status, and emerging applications of psychodynamic approaches to counseling. Departmental approval.

COUN 8910 PRACTICUM (3) LEC. 3. SU. Advanced supervised experiences appropriate to student's program emphasis. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

COUN 8920 INTERNSHIP (1-9) INT. SU. Advanced supervised on-the-job experiences appropriate to doctoral-level study. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

COUN 8930 INTERNSHIP IN COUNSELING PSYCHOLOGY (0) INT. SU. Supervised, full-time experience in Counseling Psychology at the doctoral level. May be repeated to satisfy 2000 clock hour accreditation requirement. Departmental approval.

COUN 8970 SPECIAL TOPICS (1-3) SEM. An in-depth study of the current educational, sociological, psychological, economic, health, legal, technological, and professional issues impacting the professions related to departmental programs. Course may be repeated for a maximum of 9 credit hours.

COUN 8980 FIELD PROJECT (1-10) FLD. SU. Required for completion of the Education Specialist degree. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

COUN 8990 RESEARCH AND DISSERTATION (1-10) DSR.

Criminology - CRIM

Courses

CRIM 6200 SOCIOLOGY OF LAW (3) LEC. 3. Controversial and contemporary issues in the field of criminal law from a sociological perspective.

CRIM 7300 ADVANCED CRIMINOLOGICAL THEORY (3) LEC. 3. The etiology of crime, including recent advances and issues in criminological theory.

CRIM 7350 VIOLENT CRIME (3) LEC. 3. The social, behavioral, cultural, spatial and situational antecedents of criminal violence.

Design Build - DBLD

Courses

DBLD 5620 DESIGN CONSTRUCTION STUDIO (6) LEC. 6. Pr., ARCH 4020. Second of three-studio progression. Skills associated with formation and schematic design phases of architectural project, with emphasis on rigorous design research methods, program development, and interdisciplinary team collaboration. Project initiated in 5620/6620 continues in subsequent semester.

DBLD 5640 SUSTAINABILITY FOR INTEGRATED PROJECT DELIVERY (3) LEC. 3. Departmental approval. Principles, terminology, and methods of sustainable design and construction, with emphasis on role of interdisciplinary design collaboration.

DBLD 6620 DESIGN CONSTRUCTION STUDIO (6) LEC. 6. Pr., DBLD 6610. Second of three-studio progression. Skills associated with formation and schematic design phases of architectural project, with emphasis on rigorous design research methods, program development, and interdisciplinary team collaboration. Project initiated in 5620/6620 continues in subsequent semester.

DBLD 6640 SUSTAINABILITY FOR INTEGRATED PROJECT DELIVERY (3) LEC. 3. Departmental approval. Principles, terminology, and methods of sustainable design and construction, with emphasis on role of interdisciplinary design collaboration.

DBLD 7020 INTEGRATED BUILDING PROCESSES I (3) LEC. 3. Departmental approval. Project manifestation and development preceding design and construction phases with emphasis on the project owner's perspective, the financial parameters, and the speculative demand driving project viability.

DBLD 7030 CONSTRUCTION INFORMATION MANAGEMENT (3) LEC. 3. Applications of advanced information technology in construction.

DBLD 7040 INTEGRATED BUILDING PROCESSES II (3) LEC. 3. Construction project delivery, from pre-construction service through ownership. Topics include project management, pre-construction services, pre-planning, procurement, site utilization, subcontracts, commissioning, closeout, building operation, and long-term ownership. Departmental approval.

DBLD 7550 COLLABOR PROCESS DES CONSTRU (3) LEC. 3. Current integrated delivery models and decision-making strategies related to interface of design and construction disciplines from professional, contractual, and technological perspectives. Emphasis on risk quantification between parties involved in integrated delivery.

DBLD 7551 COLLABORATIVE PRACTICE LAB (1) LAB. 4. Pr., DBLD 6620. Coreq., DBLD 6620 (students in design track). Problem-solving exercises related to effective pre-construction practices employed by design and construction professionals.

DBLD 7630 DESIGN CONSTRUCTION SUMMARY COMPREHENSIVE STUDIO (7) LEC. 7. Pr., DBLD 6620 or (DBLD 7550 or DBLD 7551). Third of three-studio progression. Development of design and construction for architectural project in interdisciplinary teams, including analysis of constructability, projected construction cost, and scheduling.

DBLD 7650 EXECUTIVE ISSUES (3) LAB. Individually proposed problems or projects related to the construction industry. Students must prepare a written proposal with defined deliverables.

DBLD 7950 GRADUATE SEMINAR (1) SEM. 1. Departmental approval. Project manifestation and development preceding design and construction phases with emphasis on the project owner's perspective, the financial parameters, and the speculative demand driving project viability. Course may be repeated for a maximum of 3 credit hours.

Early Childhood Educ - CTEC

Courses

CTEC 3020 PRIMARY MATH AND SCIENCE (3) LEC. 3. Exploration of learning and pedagogy for the development of math and science concepts appropriate for children in Kindergarten through Grade 3.

CTEC 3030 INTUITIVE THOUGHT AND SYMBOLIC FUNCTION (3) LEC. 3. Coreq., CTEC 4911. Young children's intuitive thought for pre-service teachers.

CTEC 3150 LANGUAGE DEVELOPMENT: IMPLICATIONS FOR THE CHILDHOOD EDUCATOR (3) LEC. 3. Applications of language development theories to teaching children. Emphasis on the effects theories have on curriculum and teaching.

CTEC 3200 A WORKING THEORY FOR THE CONSTRUCTIVIST EDUCATOR (3) LEC. 3. Constructivist theory for pre-service teachers preparing to teach at the early childhood level.

CTEC 4200 THE CONSTRUCTIVIST TEACHER: STRATEGIES AND TECHNIQUES (3) LEC. 3. Pr., CTEC 3200. Construction of an operational knowledge of established constructive curriculum strategies and techniques.

CTEC 4210 THE CONSTRUCTIVIST TEACHER: GROWING PROFESSIONALLY (3) LEC. 3. Pr., CTEC 4200. Coreq., CTEC 4920. The roles and responsibilities of being an early childhood professional.

CTEC 4900 DIRECTED STUDIES (1-6) IND. SU. Reading, research or other work undertaken independently by a student focused on a content area of special interest. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTEC 4910 PRACTICUM (1-6) PRA. SU. Students and faculty cooperatively select and execute an appropriate field experience. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTEC 4911 PRACTICUM IN THE PRESCHOOL (3) AAB/PRA. SU. Pr., CTEC 3200. Laboratory experiences with children from birth to five years of age designed to help students relate theory to practice.

CTEC 4912 PRACTICUM IN PRIMARY GRADES (3) PRA. SU. Pr., CTEC 3200. Coreq., CTEC 4200. Laboratory experiences with children 5 through 9 years of age help students relate theory to practice.

CTEC 4920 INTERNSHIP (10) AAB/INT. SU. Experience in a setting serving pre-primary or primary-school children with varying abilities. Admission to internship.

CTEC 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. Individual readings program. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CTEC 4997 HONORS THESIS (1-3) IND. Pr., Honors College. Student thesis is finalized in this course. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CTEC 7200/7206 EARLY CHILDHOOD EDUCATION PERSPECTIVE (3) LEC. 3. Historical overview of current issues, trends, and programs in early childhood education. May count either CTEC 7200 or CTEC 7206.

CTEC 7210 ORIGINS OF THOUGHT (3) LEC. 3. Piaget's theories of how thought develops in young children. Comparison of the social and biological roots of thought.

CTEC 7260/7266 PLAY AND EARLY CHILDHOOD EDUCATION (3) LEC. 3. Examination of children's play from a constructivist theoretical perspective and translation of theory into early childhood educational practice. May count either CTEC 7260 or CTEC 7266.

CTEC 7270 THEORY-BASED PROBLEMS IN EARLY CHILDHOOD EDUCATION (3) LEC. 3. In-depth exploration of a problem related to the thought, writing and research that form the theoretical foundations of constructivist approaches in early childhood education. Course may be repeated for a maximum of 9 credit hours.

CTEC 7510/7516 RESEARCH STUDIES IN EARLY CHILDHOOD EDUCATION (3) LEC. 3. How to read, review, analyze and interpret significant research studies in early childhood education. May count either CTEC 7510 or CTEC 7516.

CTEC 7520/7526 CURRICULUM AND TEACHING IN EARLY CHILDHOOD EDUCATION (3) LEC. 3. Reappraisal of experiences and content for children by focusing on the nature of the learner and the nature of the knowledge to be learned. May count either CTEC 7520 or CTEC 7526.

CTEC 7530 ORGANIZATION OF PROGRAM IN EARLY CHILDHOOD EDUCATION (3) LEC. 3. Organization, administration, and supervision of early childhood programs.

CTEC 7540/7546 EVALUATION OF PROGRAMS IN EARLY CHILDHOOD EDUCATION (3) LEC. 3. Assessment and evaluation of all program components from a constructivist perspective. May count either CTEC 7540 or CTEC 7546.

CTEC 7900 DIRECTED STUDIES (1-6) IND. SU. Independent learning objectives related to the student's area of specialization. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTEC 7910 PRACTICUM IN AREA OF SPECIALIZATION (1-6) PRA. SU. Experience relating theory and practice, usually in a school setting. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTEC 7920 INTERNSHIP (1-9) INT. SU. Supervised on-the-job experiences in a school, college or other appropriate setting, accompanied by regularly scheduled, on-campus discussion periods. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

CTEC 7970 SPECIAL TOPICS (3-9) AAB. Cooperative pursuit of selected concepts and theories, normally in small groups. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

CTEC 7990/7996 RESEARCH AND THESIS (1-10) MST. Course may be repeated with change in topics.

CTEC 8240/8246 RESEARCH IN EARLY CHILDHOOD EDUCATION (3) LEC. 3. Review, analysis and interpretation of available research with emphasis on designing new research to meet the needs of young children. May count either CTEC 8240 or CTEC 8246.

CTEC 8270 THEORY-BASED PROBLEMS IN EARLY CHILDHOOD EDUCATION (3) LEC. 3. In-depth exploration of problems related to the thought, writings, and research that form the theoretical foundations of constructivist approaches to early childhood education. Master's Degree. Course may be repeated for a maximum of 6 credit hours.

CTEC 8720/8726 DESIGNING EARLY CHILDHOOD CURRICULUM (3) LEC. 3. Application of early childhood history, philosophy, program analysis and constructivist theory to the design of early childhood curriculum. Master's Degree. May count either CTEC 8720 or CTEC 8726.

CTEC 8850 CONSTRUCTIVIST INVESTIGATIONS IN EARLY CHILDHOOD SETTINGS (3) LEC. 3. Analysis and interpretation of the design of constructivist investigation. Master's Degree.

CTEC 8950 SEMINAR (3) SEM. 3. Selected concepts and theoretical formulations of common interest. Course may be repeated for a maximum of 12 credit hours.

CTEC 8970 SPECIAL TOPICS (3-9) LEC. Cooperative pursuit of selected concepts and theories, normally in small groups. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

CTEC 8980 FIELD PROJECT (1-3) FLD. SU. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CTEC 8990/8996 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with a change in topic. Course may be repeated with change in topics.

Economics - ECON

Courses

ECON 2020 PRINCIPLES OF MICROECONOMICS (3) LEC. 3. Economic principles emphasizing scarcity/choice, consumer behavior, supply/demand, markets, production/cost, globalization of markets, role of government, and market/government failure.

ECON 2027 HONORS PRINCIPLES OF MICROECONOMICS (3) LEC. 3. Pr., Honors College. Economic principles emphasizing scarcity/choice, consumer behavior, supply/demand, markets, production/cost, globalization of markets, role of government, and market government failure.

ECON 2030 PRINCIPLES OF MACROECONOMICS (3) LEC. 3. Economic principles emphasizing economic aggregates, including: measuring economic performance, macroeconomic theory, inflation and unemployment, money and banking and fiscal and monetary policy.

ECON 2037 HONORS PRINCIPLES OF MACROECONOMICS (3) LEC. 3. Pr., Honors College. Economic principles emphasizing economic aggregates, including: measuring economic performance, macroeconomic theory, inflation and unemployment, money and banking and fiscal and monetary policy.

ECON 3020 INTERMEDIATE MICROECONOMICS (3) LEC. 3. Pr., ECON 2020 or ECON 2027. Theory of pricing under varying market conditions and distribution of income among the factors of production.

ECON 3030 INTERMEDIATE MACROECONOMICS (3) LEC. 3. Pr., ECON 2030 or ECON 2037. A study of national economic aggregates and the market determination of output, employment, and inflation. An introduction to economic monetary and fiscal policy on the economy.

ECON 3040 CONSUMER ECONOMICS (3) LEC. 3. Pr., (ECON 2020 or ECON 2027) or (ECON 2030 or ECON 2037).A broad study of consumer economics at both the household level and the national consumption aggregates.

ECON 3100 LAW AND ECONOMICS (3) LEC. 3. Pr., ECON 2020 or ECON 2027.Description of the many substantive areas in which law has an economics foundation and an analysis of how law affects economic relations.

ECON 3200 MONEY AND BANKING (3) LEC. 3. Pr., ECON 2030 or ECON 2037.Theoretical and institutional analysis of monetary systems, foreign exchange and commercial banking.

ECON 3300 ECONOMICS OF SPORTS (3) LEC. 3. Pr., ECON 2020 or ECON 2027.Economic analysis of professional and collegiate sports, including the structure of competition and performance in individual and team sports.

ECON 3500 COMPARATIVE ECONOMIC SYSTEMS (3) LEC. 3. Pr., ECON 2030 or ECON 2037.Analysis of alternative government approaches to solving basic economic problems.

ECON 3600 MATHEMATICAL METHODS FOR ECONOMISTS (3) LEC. 3. Pr., ECON 3020 and (MATH 1690 or MATH 2630).The fundamental mathematical and quantitative methods employed by economists. The application of calculus, probability, statistics, and linear algebra to economics.

ECON 3700 HISTORY OF ECONOMIC THOUGHT (3) LEC. 3. Pr., ECON 2030 or ECON 2037.The development of economic ideas, principles and systems of analysis from early times to the present.

ECON 3800 PUBLIC CHOICE (3) LEC. 3. Pr., ECON 2030 or ECON 2037.Economic analysis of public sector decision making. Emphasis on actions taken by voters, bureaucrats, and lobbyists elected to influence public sector outcomes.

ECON 4000 ECONOMICS OF WORK AND PAY (3) LEC. 3. Pr., ECON 2020 or ECON 2027.Theoretical and institutional examination of the labor market, including wage theories, unionism, occupational choice and public policy.

ECON 4100 INDUSTRIAL ORGANIZATION (3) LEC. 3. Pr., ECON 2020.Relationship of market structure to the pricing behavior and economic performance of firms. Topics include regulation, research and development and technical change.

ECON 4200 GOVERNMENT, BUSINESS AND SOCIETY (3) LEC. 3. Pr., ECON 2030 or ECON 2037.Economic role of government in a free enterprise economy. Application of microeconomic theory to policy issues, particularly antitrust and regulation.

ECON 4300 INTERNATIONAL ECONOMICS (3) LEC. 3. Pr., ECON 2030 or ECON 2037.Economic consequences of free trade, including identification and measurement of gains and losses. Analysis of trade restrictions such as quotas, tariffs and VERs, Examination of labor and capital movements between nations.

ECON 4400 ECONOMICS OF INNOVATION (3) LEC. 3. Pr., (ECON 2020 or ECON 2027) or (ECON 2030 or ECON 2037).A study of how innovation and technological change impacts the individual firm and the national and global economies.

ECON 4600 ECONOMETRICS I (3) LEC. 3. Pr., ECON 3600 and (STAT 2010 or STAT 2510 or STAT 2610 or MNGT 2600).This course provides students with a basic statistical toolbox that can be used to analyze economic data and evaluate economic models. We cover topics relating to simple and multivariate linear regressions, maximum likelihood estimation, serial correlation and heteroscedasticity, simultaneous equations, qualitative response models, and basic time series.

ECON 4920 INTERNSHIP (1-3) AAB/INT. SU. Pr., ECON 2030 and ECON 2037.Departmental approval. Course may be repeated for a maximum of 3 credit hours.

ECON 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. ECON 3020.Directed readings on a topic of special interest. Departmental approval, Course may be repeated for a maximum of 3 credit hours.

ECON 4970 SPECIAL TOPICS (1-3) AAB/IND. SU. Investigation and research into economic problems of special interest to the student and instructor. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ECON 4997 HONORS THESIS (1-3) IND. Pr., Honors College. ECON 3020.Directed honors thesis research. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

ECON 5020 ADVANCED MICROECONOMICS (3) LEC. 3. Pr., ECON 3020 and MATH 1610.Mathematical analysis of market-based pricing and production. Includes the economics of information and uncertainty, and strategic behavior. Departmental approval.

ECON 5030 MACROECONOMIC THEORY AND POLICY (3) LEC. 3. Pr., ECON 2030 or ECON 2037. Analysis of the national economy and impact of government policies on aggregate economic variables. Departmental approval.

ECON 5100 ECONOMICS OF GROWTH AND DEVELOPMENT (3) LEC. 3. Pr., ECON 2030 or ECON 2037. Cause/effects of economic growth and development. Measuring growth, role of government policy, growth and trade, investment, etc.

ECON 5200 URBAN AND REGIONAL ECONOMIC DEVELOPMENT (3) LEC. 3. Pr., ECON 2030 or ECON 2037 and ECON 3020. Nature/causes of state/local economic development, including plant location, residential location, interregional trade and factor flows, public policy.

ECON 5400 ECONOMIC HISTORY OF THE UNITED STATES (3) LEC. 3. Pr., ECON 2030 or ECON 2037. Survey of the economic advancement of the United States from European origins to the present. Departmental approval.

ECON 5600 BUSINESS AND ECONOMIC FORECASTING (3) LEC. 3. Pr., ECON 2030 or ECON 2037 and STAT 2610 or STAT 2010. Interpretation of macroeconomic forecasting methods and development of competency in forecasting at the firm level. Departmental approval.

ECON 5700 HEALTH ECONOMICS (3) LEC. 3. Analysis of the economics of health care, including demand for and supply of health care, and health care policy. Departmental approval.

ECON 5800 GOVERNMENT SPENDING AND TAXATION (3) LEC. 3. The economic rationale for government expenditures, economic consequences of public spending, and methods of taxation and funding of government programs. Departmental approval.

ECON 6020 ADVANCED MICROECONOMICS (3) LEC. 3. Pr., ECON 3020 and MATH 1610. Mathematical analysis of market-based pricing and production. Includes the economics of information and uncertainty, and strategic behavior.

ECON 6030 MACROECONOMIC THEORY AND POLICY (3) LEC. 3. Pr., ECON 2030 or ECON 2037. Analysis of the national economy and impact of government policies on aggregate economic variables. Departmental approval.

ECON 6100 ECONOMICS OF GROWTH AND DEVELOPMENT (3) LEC. 3. Pr., or ECON 2030 or ECON 2037. Cause/effects of economic growth and development. Measuring growth, role of government policy, growth and trade, investment, etc.

ECON 6200 URBAN AND REGIONAL ECONOMIC DEVELOPMENT (3) LEC. 3. Pr., ECON 2030 or ECON 2037 and ECON 3020. Nature/causes of state/local economic development, including plant location, residential location, interregional trade and factor flows, public policy.

ECON 6400 ECONOMIC HISTORY OF THE UNITED STATES (3) LEC. 3. Pr., ECON 2030 or ECON 2037. Survey of the economic advancement of the United States from European origins to the present. Or departmental approval.

ECON 6600 BUSINESS AND ECONOMIC FORECASTING (3) LEC. 3. Pr., ECON 2030 or ECON 2037 and STAT 2610 or STAT 2010. Interpretation of macroeconomic forecasting methods and development of competency in forecasting at the firm level Or departmental approval.

ECON 6700/6706 HEALTH ECONOMICS (3) LEC. 3. Pr., ECON 3020. Analysis of the economics of health care, including demand for and supply of health care, and health care policy. Departmental approval.

ECON 6800 GOVERNMENT SPENDING AND TAXATION (3) LEC. 3. Pr., ECON 3020. The economic rationale for government expenditures, economic consequences of public spending, and methods of taxation and funding of government programs. Departmental approval.

ECON 7000 MANAGERIAL ECONOMICS (3) LEC. 3. Microeconomic theories of the firm and of markets, with emphasis on their applications to current business issues. Consent of MBA program director.

ECON 7110 MICROECONOMICS I (3) LEC. 3. Pr., ECON 3020. Consumer behavior and market models of competition and monopoly. Traditional and contemporary theories of consumer/ household behavior under constraint; models of competitive behavior. Departmental approval.

ECON 7120 MICROECONOMICS II (3) LEC. 3. Pr., ECON 7110. Analysis of producer behavior, including production theory, cost theory, profit maximization, theories of various market structures and derived demand for inputs. Departmental approval.

ECON 7130 MATHEMATICAL ECONOMICS (3) LEC. 3. Pr., ECON 3020 and ECON 6030. Fundamental mathematical methods in economics and econometrics: linear and matrix algebra, calculus, comparative statistics, optimization, concavity, constrained optimization dynamics difference equations, and differential equations. Departmental approval.

ECON 7210 MACROECONOMICS I (3) LEC. 3. Pr., ECON 6030. Evaluation of fundamental theoretical and policy-oriented issues in macroeconomics, emphasizing post-Keynesian developments. Departmental approval.

ECON 7220 MACROECONOMICS II (3) LEC. 3. Pr., ECON 6030. Foundations of macroeconomics, neoclassical production and growth theory, overlapping generations models, optimal saving, open economy macroeconomics, applied time series macrodynamics. Or departmental approval.

ECON 7310 ECONOMETRICS I (3) LEC. 3. Advanced treatment of the standard linear model of least square theory, including assumptions and properties of the SLM, and the statistical testing of behavioral hypotheses. Departmental approval.

ECON 7330 MICROECONOMETRICS (3) LEC. 3. Pr., ECON 7310. Econometric techniques for applied microeconomics. Limited dependent variable models, survival and count data analysis, and selection bias.

ECON 7340 MACROECONOMETRICS (3) LEC. 3. Pr., ECON 7310. The analysis of economic time series and the identification and estimation of parameters in multi-equation models.

ECON 7410 HISTORY OF ECONOMIC THOUGHT I (3) LEC. 3. Pr., ECON 3700. Analysis and study of classical contributions to economics, from early times to Karl Marx. Departmental approval.

ECON 7420 HISTORY OF ECONOMIC THOUGHT II (3) LEC. 3. Pr., ECON 3700. Neoclassical economics including Mill, Jevons, early Austrians, early French contributors, Veblenian institutional economics, and Alfred Marshall. Departmental approval.

ECON 7990 RESEARCH AND THESIS (1-6) MST. Departmental approval. Course may be repeated with change in topics.

ECON 8110 ADVANCED MICROECONOMICS I (3) LEC. 3. Pr., ECON 7120. Advanced analysis, integrating the economics of time and uncertainty into mainline price theory. Departmental approval.

ECON 8120 ADVANCED MICROECONOMICS II (3) LEC. 3. Pr., ECON 7120. Advanced analysis, integrating imperfect information and strategic behavior into economic models of trade and investment. Departmental approval.

ECON 8210 TOPICS IN MACROECONOMICS (3) LEC. 3. Pr., ECON 7220. Goals, procedures and achievements in attaining monetary objectives domestically and abroad. Emphasis on macro-money models and effects of monetary policy on economic activity. Departmental approval.

ECON 8420 ECONOMIC INSTITUTIONS AND CONTEMPORARY ECONOMIC THEORY (3) LEC. 3. How contemporary economic theory helps explain the emergence, hey-day and decline of economic institutions, including "Social" and regulatory institutions. Departmental approval.

ECON 8510 ECONOMICS OF TAXATION (3) LEC. 3. Pr., ECON 7120. Examines tax structures in the U.S. evaluates tax reform proposals and the effects of taxation on resource allocation and economic welfare. Departmental approval.

ECON 8520 PUBLIC CHOICE (3) LEC. 3. Advanced analysis of governmental expenditures and other not-for-profit sectors of the economy. Departmental approval.

ECON 8530 ECONOMIC ANALYSIS OF THE LAW (3) LEC. 3. Pr., ECON 3020. Advanced analysis of the substantive areas in which law has an economic foundation and ways law affects economic relations. Departmental approval.

ECON 8540 SEMINAR IN ENVIRONMENTAL ECONOMICS (3) LEC. 3. Pr., ECON 3020. Advanced analysis of pricing and allocation of renewable and non-renewable resources. Departmental approval.

ECON 8550 EXTERNALITIES AND PUBLIC GOODS (3) LEC. 3. Pr., ECON 7120. Advanced analysis of pricing and allocation of economic goods when property rights are not well defined. Departmental approval.

ECON 8610 INDUSTRIAL ORGANIZATION I (3) LEC. 3. Pr., ECON 7120. Determinants of market structure, effects of market structure on industry performance, theory of the firm, research and development, advertising and vertical integration. Departmental approval.

ECON 8620 INDUSTRIAL ORGANIZATION II (3) LEC. 3. Pr., ECON 7120. Primary focus is on case studies in the history and current practice of regulation in the United States at all levels. Departmental approval.

ECON 8710 INTERNATIONAL TRADE (3) LEC. 3. Trade theory: classical, neoclassical, factor proportions, and industrial organization. Applied trade theory and empirical applications. Departmental approval.

ECON 8720 INTERNATIONAL MACROECONOMICS (3) LEC. 3. Theoretical and applied time series analysis at open economy macroeconomic models, international monetary and financial theory, balance of payments theory, and exchange rates. Departmental approval.

ECON 8810 LABOR MARKET ANALYSIS (3) LEC. 3. Pr., ECON 7110. Analysis of labor markets, and determination of wages and other terms of employment. Emphasis on academic studies of labor market issues. Departmental approval.

ECON 8820 TOPICS IN LABOR ECONOMICS (3) LEC. 3. Pr., ECON 7110. Selected topics, including education and on-the-job training. Labor mobility/immigration, employment discrimination, and the impact of labor unions. Departmental approval.

ECON 8970 SPECIAL TOPICS (1-3) LEC. Advanced topics related to Economics. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

ECON 8980 ECONOMICS WORKSHOP (1) LEC. 1. Individual research project, presentations, and discussion of the economics profession. Departmental approval.

ECON 8990 RESEARCH AND DISSERTATION (1-10) DSR. Departmental approval. Course may be repeated with change in topics.

Ed Res Methods & Analysis - ERMA

Courses

ERMA 7100 ADVANCED STUDY OF EDUCATIONAL MEASUREMENT AND EVALUATION (3) LEC. 3. Educational measurement and evaluation with special emphasis on uses of measurement data such as standardized testing and emerging evaluation models such as alternative and authentic assessment.

ERMA 7110 EDUCATIONAL PSYCHOLOGY AND ASSESSMENT (3) LEC. 3. Study of educational psychology as it applies to understanding the teaching-learning process. Measurement and evaluation skills will also be covered.

ERMA 7200/7206 BASIC METHODS IN EDUCATION RESEARCH (3) LEC. 3. Major modes of inquiry in contemporary educational research including experimental, casual comparative, descriptive, qualitative inquiry, and action research models. May count either ERMA 7200 or ERMA 7206.

ERMA 7210 THEORY AND METHODOLOGY OF QUALITATIVE RESEARCH (3) LEC. 3. Major modes of qualitative research, their underlying philosophical assumptions about knowledge, and the major strategies for collecting and analyzing relevant data.

ERMA 7220 APPLIED QUALITATIVE RESEARCH (3) LEC. 3. Pr., (ERMA 7210 or FOUN 7210). Study of detailed strategies of data collection, principles of observation, interviewing, focus groups, recording and coding data, triangulation, strategies for analyzing coded data, and writing up of one's findings.

ERMA 7300/7306 DESIGN AND ANALYSIS IN EDUCATION I (3) LEC. 3. Basic methods of inferential analysis including t-tests, between and within subjects ANOVA, mixed ANOVAs and hierarchical designs as they are utilized in educational research. Departmental approval. May count either ERMA 7300 or ERMA 7306.

ERMA 7310/7316 DESIGN AND ANALYSIS IN EDUCATION II (3) LEC. 3. Pr., (FOUN 7300 or ERMA 7300) or (FOUN 7306 or ERMA 7306). Bivariate and multiple correlation and regression analysis, trend analysis, analysis of covariance, and logistic regression, as they are utilized in educational research. Departmental approval. May count either ERMA 7310 or ERMA 7316.

ERMA 7900 DIRECTED STUDIES (1-6) IND. SU. Special study in which the student's learning efforts are guided toward desired objectives. Course may be repeated for a maximum of 6 credit hours.

ERMA 7970 SPECIAL TOPICS IN FOUNDATION OF EDUCATION (3-6) LEC. Consideration of historical, philosophical, social, psychological, measurement, statistics or research issues, and their impact on education. Course may be repeated for a maximum of 6 credit hours.

ERMA 8100 PROGRAM EVALUATION (3) LEC. 3. Study of various theories and models of curriculum evaluation, methodological issues regarding planning and conducting evaluation studies, reporting and using information from evaluation.

ERMA 8120 TEACHER EVALUATION (3) LEC. 3. Analysis of research on teaching, classroom observation methods, teaching portfolios, supervision of teachers, license and certification assessment, ethical and legal consideration, and using information to improve teaching.

ERMA 8200/8206 SURVEY RESEARCH METHODS (3) LEC. 3. Overview of survey research, sampling issues, selection and construction of survey instruments, response effects, issues influencing response rate, reliability and validity of survey data, and analysis of survey data. May count either ERMA 8200 or ERMA 8206.

ERMA 8320/8326 DESIGN AND ANALYSIS IN EDUCATION III (3) LEC. 3. Pr., (FOUN 7310 or ERMA 7310) or (ERMA 7316 or FOUN 7316). Discriminate analysis, MANOVA, canonical correlation, path analysis, exploratory and confirmatory factor analysis, and hierarchical linear modeling as they are utilized in educational research. Departmental approval. May count either ERMA 8320 or ERMA 8326.

ERMA 8330 NON-PARAMETRIC DATA ANALYSIS IN EDUCATION RESEARCH (3) LEC. 3. Pr., FOUN 7300 or ERMA 7300 or ERMA 7306. Common non-parametric statistical tests appropriate for use with nominal and ordinal data in educational applications. These include rank-order correlation, sign tests, median tests, analysis of variance of ranks and log-linear analysis. Departmental approval.

ERMA 8340 A PRACTICAL INTRODUCTION TO STRUCTURAL EQUATION MODELING (3) LEC. 3. Pr., (FOUN 8320 or ERMA 8320). Theory and practice of structural equation modeling techniques as they are utilized in educational research will be developed by expanding concepts of multiple linear regression and exploratory factor analysis to allow for correlation and causally related latent constructs. Departmental approval.

ERMA 8350 ADVANCED MEASUREMENT THEORY (3) LEC. 3. Pr., (FOUN 7300 or ERMA 7300 or ERMA 7306 or FOUN 7306) and (FOUN 7310 or ERMA 7310 or FOUN 7316 or ERMA 7316). Introduction to classical and modern (IRT) test theory, measurement properties, differential item functioning, standard and adaptive testing.

ERMA 8990/8996 RESEARCH AND DISSERTATION (1-10) DSR. Individualized support and direction for students writing their dissertations. Courses may be repeated for a maximum of 10 hours. Course may be repeated with change in topic.

Educ Psychology - EPSY

Courses

EPSY 7400/7406 ED PSYCH & EDUCATIONAL IMPLICA (3) LEC. 3. Educational psychology theory and research addressing critical problems, challenges, and opportunities in education or other growth-oriented settings. Content ranges from the study of learning to educational evaluation and authentic assessment. May count either EPSY 7400 or EPSY 7406

EPSY 7410 THE INDIVIDUAL IN THE TEACHING-LEARNING PROCESS (3) LEC. 3. The study of human growth, development, and motivation theory and research, including culture, socio-economic status, language, gender and race as a base for understanding individual differences and their sources.

EPSY 7420/7426 LEARNING THEORY AND EDUCATIONAL PRACTICE (3) LEC. 3. Advanced study of learning theory and research with an emphasis on application to effective design, implementation, and evaluation of instruction. May count either EPSY 7420 or EPSY 7426.

EPSY 7430 MOTIVATION AND ACHIEVEMENT (3) LEC. 3. Social, cultural, and psychological antecedents of achievement motivation are examined. This process requires reviewing theories and research, and emphasis is placed on discerning implications for practice and policy.

EPSY 7440 CLASSROOM MANAGEMENT: SKILLS AND REFLECTION (3) LEC. 3. Advanced study and analysis of existing classroom management discipline models including observation research activity.

EPSY 7450 PERSONAL AND PROFESSIONAL DEVELOPMENT AND PERSONALITY DYNAMICS (3) LEC. 3. Survey of different theories and models of personality leading to in-depth study of theories and models most applicable for use in conceiving of and building personal and professional development plans.

EPSY 7900 DIRECTED STUDIES (1-6) IND. SU. Special study in which the student's learning efforts are guided toward desired objectives. Course may be repeated for a maximum of 6 credit hours.

EPSY 7970 SPECIAL TOPICS IN FOUNDATION OF EDUCATION (3-6) LEC. Consideration of historical, philosophical, social, psychological, measurement, statistics or research issues, and their impact on education.

EPSY 8410/8416 LEARNING IN THE SOCIAL CONTEXT (3) LEC. 3. Examination of the complex nature of learning as a socially-shared and individualized process. Topics may include the social construction of knowledge, scaffolded instruction, cognitive apprenticeships, and problem based learning. May count either EPSY 8410 or EPSY 8416.

EPSY 8430 TOPICAL SEMINAR IN LEARNING, COGNITION, AND INSTRUCTION (3) LEC. 3. An intensive and advanced study of research and theory on selected topics. Examples include folk theories of mind and alternative methods of studying thinking.

EPSY 8440 ED PSYCH APPRENT SEMINAR (3) LEC. 3. Focuses on the historical foundations of educational psychology as well as possibilities for future disciplinary development.

EPSY 8540 EDUCATIONAL PSYCHOLOGY RESEARCH APPRENTICESHIP SEMINAR (3) LEC. 3. A structured context for students to begin applying what they have learned from their research methods and statistic courses. Students will design and conduct research that contributes to the educational psychological knowledge base.

EPSY 8640 EDUCATIONAL PSYCHOLOGY LEARNING AND INSTRUCTION APPRENTICESHIP SEMINAR (3) LEC. 3. A structured opportunity for students to begin applying educational psychological concepts and theories in the classroom. Students will study theories of learning and instruction and begin to translate and implement these theories into practice.

EPSY 8990/8996 RESEARCH AND DISSERTATION (1-10) DSR. Individualized support and direction for students writing their dissertations. Courses may be repeated for a maximum of 12 hours. Course may be repeated with changes in topic.

Educational Leadership - EDLD

Courses

EDLD 7200 SUPERVISION AND PERSONNEL MANAGEMENT (3) LEC. 3. Supervision theory and practice with responsibility for leadership in the recruitment, evaluation and staff development of employees.

EDLD 7210/7216 MULTIPROFESSIONAL LEADERSHIP (3) LEC. 3. Theories, concepts and principles of leadership from a multi-disciplinary, multi-professional perspective. Students will apply knowledge to practice in diverse settings and situations. May count either EDLD 7210 or EDLD 7216.

EDLD 7220 ORGANIZATIONAL AND SCHOOL MANAGEMENT (3) LEC. 3. Procedures and practices in school educational management. Covers business management, facilities, student activities, library services, transportation, and student records.

EDLD 7230 STUDENT SERVICES ADMINISTRATION IN POSTSECONDARY EDUCATION (3) LEC. 3. Organization, administration and evaluation of student personnel services in post-secondary education.

EDLD 7270 OVERVIEW OF POSTSECONDARY EDUCATION (3) LEC. 3. Overview of the history and evolution of post-secondary education in North America.

EDLD 7330 INTRODUCTION TO CURRICULUM AND INSTRUCTIONAL LEADERSHIP (3) LEC. 3. Principles of curriculum development and the leadership skills required to enact it with emphasis on school settings.

EDLD 7340 OVERVIEW OF CURRICULUM PROCESSES (3) LEC. 3. Curriculum as a field of study; the first course required for the ASC concentration in curriculum; an overview of curriculum history, processes, models, and designs.

EDLD 7500 PRINCIPAL LEADERSHIP (3) LEC. 3. Designed to serve instructional leaders in K-12 settings concerning leadership dispositions and leadership theory important to promoting student success and achievement.

EDLD 7510 ACTION RESEARCH AND DATA ANALYSIS (3) LEC. 3. Research methodologies to improve instructional and school-based decision-making action, qualitative, and case study techniques applied to school, classroom, or school-community observation.

EDLD 7520 LEADERSHIP AND THE LEARNING ORGANIZATION (3) LEC. 3. Management of schools as learning organizations; issues related to student learning and achievement through attention to organizational components.

EDLD 7530 PLANNING AND CONTINUOUS IMPROVEMENT (3) LEC. 3. Development of frameworks for collection, analysis, and use of school data for the improvement of instruction, the learning environment, and student achievement.

EDLD 7540 INSTRUCTIONAL AND CURRICULAR LEADERSHIP (3) LEC. 3. Curriculum design and development; areas of study include student needs, organizational mission and goals, data driven improvement, change process, diverse faculty, curriculum alignment tools.

EDLD 7550 EDUCATIONAL FINANCE AND RESOURCE MANAGEMENT (3) LEC. 3. Preparation of pro-active leaders in school business affairs; use of action research and components of a comprehensive, ongoing, planning and budgeting program; facilities management.

EDLD 7560 EDUCATIONAL SYSTEMS AND COMMUNITIES (3) LEC. 3. Change theory, forecasting, trend analysis and application of these concepts to student achievement and school improvement efforts.

EDLD 7570 LEGAL AND ETHICAL ISSUES (3) LEC. 3. Ethical and legal provisions for education communities: emphasis on the support of and belief in the cultural value of a diverse and educated democratic society.

EDLD 7580 SUPERVISION AND PERSONNEL ISSUES IN EDUCATION (3) LEC. 3. Policies and practices related to teacher recruitment, selection, evaluation, and professional development; faculty/staff developmental processes that impact student achievement and school improvement efforts.

EDLD 7900 DIRECTED STUDIES (1-9) IND. SU. Independent study directed toward desired objectives. Includes evaluation by professor and student at regular intervals. Course may be repeated for a maximum of 9 credit hours.

EDLD 7910/7916 PRACTICUM (1-6) PRA. Experience closely relating theory and practice, usually conducted in realistic settings. May count either EDLD 7910 or EDLD 7916. Course may be repeated for a maximum of 6 credit hours.

EDLD 7920 ADMINISTRATIVE INTERNSHIP (1-6) AAB/INT. Opportunities for interns to internalize and employ administrative skills learned during graduate coursework. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

EDLD 7930 ADMINISTRATIVE INTERNSHIP/RESIDENCY (1-6) INT. Ongoing field-based experiences in educational administration; observation, participation, and leading with practicing administrators in school systems. Course may be repeated for a maximum of 6 credit hours.

EDLD 7970 SPECIAL TOPICS (1-9) LEC. Variable content for advanced studies in the area of educational leadership. Course may be repeated for a maximum of 9 credit hours.

EDLD 8200/8206 ASSESSMENT AND EVALUATION IN LEARNING ORGANIZATIONS (3) LEC. 3. Study of assessment and evaluation practices that enable learning organizations to use data for decision-making purposes. May count either EDLD 8200 or EDLD 8206.

EDLD 8210 EDUCATIONAL LEADERSHIP: THEORY AND PRACTICE (3) LEC. 3. Leadership theory and applications for K-12 settings.

EDLD 8220/8226 PERSONAL AND PROFESSIONAL DEVELOPMENT (3) LEC. 3. Includes theoretical frameworks and applications for successful and systematic mentoring of professionals in organizations. May count either EDLD 8220 or EDLD 8226.

EDLD 8230 SYSTEMIC PLANNING AND BUDGETING (3) LEC. 3. Covers the components and implementation of a comprehensive ongoing planning and budgeting program for learning organizations.

EDLD 8240/8246 TRENDS AND ISSUES IN EDUCATIONAL ADMINISTRATION (3) LEC. 3. Trends and issues affecting educational institutions with particular attention to development of administrative procedures to cope with educational changes. May count either EDLD 8240 or EDLD 8246.

EDLD 8250 ORGANIZATIONAL POWER, POLITICS AND POLICY FORMATION (3) LEC. 3. Analysis of social forces, antecedent movements, and political actions affecting organizations. The study of policy development and practice.

EDLD 8260/8266 THEORY AND DEVELOPMENT OF ORGANIZATIONS (3) LEC. 3. Theoretical frameworks of educational organizations. May count either EDLD 8260 or EDLD 8266.

EDLD 8270/8276 LEADERSHIP IN FINANCE AND MANAGEMENT (3) LEC. 3. Theory and practice of instructional leadership related to personnel and fiscal management of a school or school district. May count either EDLD 8270 or EDLD 8276.

EDLD 8280 THE SUPERINTENDENCY IN EDUCATION (3) LEC. 3. Theoretical frameworks of educational organizations.

EDLD 8300 CURRICULUM THEORY AND PRACTICE (3) LEC. 3. Pr., EDLD 7340. Advanced course dealing with application of curriculum theories with an emphasis on the impact of philosophical and theoretical beliefs on practice. Departmental approval; or other General Curriculum course.

EDLD 8310/8316 LEADERSHIP IN THE DEVELOPMENT AND APPLICATION OF CURRICULUM AND THEORY DESIGN (3) LEC. 3. Application of transformative leadership in the design, delivery, and evaluation of curriculum in a wide variety of organizational settings. May count either EDLD 8310 or EDLD 8316.

EDLD 8320/8326 CURRICULUM LEADERSHIP FOR ORGANIZATIONS (3) LEC. 3. Pr., EDLD 7340 and EDLD 8300 and EDLD 8310. For those considering a career in upper level management. focuses on context, societal, and political influences related to curriculum processes and organizational change. Departmental approval. May count either EDLD 8320 or EDLD 8326.

EDLD 8340 TRANSFORMATIONAL PROCESSES AND ORGANIZATIONAL CHANGE (3) LEC. 3. Organizational and transformational change at personal, interpersonal, and institutional levels.

EDLD 8400/8406 ETHICS FOR LEADERS (3) LEC. 3. Theory and practice of ethics and the role of ethical and personal integrity for leaders in the context of educational organizations and the communities they serve. May count either EDLD 8400 or EDLD 8406.

EDLD 8480 INSTITUTIONAL RESEARCH AND DECISION SUPPORT (3) LEC. 3. Components of institutional research and assessment programs that can support the comprehensive planning, decision support, and management needs of the institution.

EDLD 8500 THE PROFESSORIATE (3) LEC. 3. Study of differences and similarities in faculty roles, work, and career paths using various disciplinary and institutional lenses.

EDLD 8510 SEMINAR IN COLLEGE TEACHING (3) LEC. 3. Overview of major issues in Higher Education and methods of instruction in college teaching. Involves use of experiential learning, group and collaborative activities such as microteaching, case studies, e-mail dialogue and reflective writing.

EDLD 8940/8946 DIRECTED FIELD EXPERIENCE IN EDUCATIONAL LEADERSHIP (1-6) FLD. Field-based experience in diverse settings to develop knowledge, skills, and abilities in an area of special interest. Course may be repeated for a maximum of 6 credit hours.

EDLD 8950 SEMINAR (3) SEM. 3. Professional and social integration into doctoral program; enhancement of professional knowledge through structured inquiry, professional dialogue, and reflective thinking. Course may be repeated for a maximum of 6 credit hours.

EDLD 8990/8996 RESEARCH AND DISSERTATION (1-10) DSR. Individualized support and direction for students writing their dissertation. Course may be repeated for a maximum of 10 hours. Course may be repeated with change in topics.

Educational Media - EDMD

Courses

EDMD 3300 UTILIZATION OF INSTRUCTIONAL TECHNOLOGY FOR EDUCATORS (2) LEC. 1. LAB. 2. Basics of current and emerging instructional & communication technologies with primary emphasis on curricular integration. Location, selection, and application of technology resources (WWW, commercially authored software, etc.) for curricular needs with emphasis on developmental stages, learning styles and learning technologies. Limited to majors requiring teaching certification.

EDMD 5000 INSTRUCTIONAL TECHNOLOGY FOR TEACHING AND LEARNING (3) LEC. 3. Introduction to the systematic application of instructional technologies in teaching and learning environments.

EDMD 5100 MEDIA FOR CHILDREN (3) LEC. 3. Examination and evaluation of current literature in print and other formats, including oral literature. Focuses on literary and instructional criteria for selecting and utilizing media.

EDMD 6000/6006 INSTRUCTIONAL TECHNOLOGY FOR TEACHING AND LEARNING (3) LEC. 3. Introduction to the systematic application of instructional technologies in teaching and learning environments. May count either EDMD 6000 or EDMD 6006.

EDMD 6100 MEDIA FOR CHILDREN (3) LEC. 3. Examination and evaluation of current literature in print and other formats, including oral literature. Focuses on literary and instructional criteria for selecting and utilizing media.

EDMD 7000/7006 INSTRUCTIONAL DESIGN AND DEVELOPMENT (3) LEC. 3. Theory, problems, procedures, and standards in the utilization of technology in instructional design and development. May count either EDMD 7000 or EDMD 7006.

EDMD 7010/7016 INSTRUCTIONAL AND INFORMATION TECHNOLOGIES (3) LEC. 3. Evaluation, selection, and use of traditional and current technologies for instruction, information, and administration in learning environments. May count either EDMD 7010 and EDMD 7016.

EDMD 7020/7026 PRINCIPLES OF GRAPHIC DESIGN FOR INSTRUCTION (3) LEC. 3. Principles of graphic design and visual literacy to facilitate the presentation of information. Criteria for graphics utilization examined. May count either EDMD 7020 or EDMD 7026.

EDMD 7100/7106 SELECTION AND USE OF MEDIA FOR YOUTH (3) LEC. 3. Evaluation, selection, and use of print and non-print media for youth, including materials for multi-cultural, special and gifted education. May count either EDMD 7100 or EDMD 7106.

EDMD 7110/7116 BIBLIOGRAPHIC DESCRIPTION, ORGANIZATION AND CONTROL (3) LEC. 3. Principles and procedures of describing, classifying and organizing resources with applications using new technologies. May count either EDMD 7110 or EDMD 7116.

EDMD 7120/7126 INFORMATION SOURCES, SERVICES AND INSTRUCTION (3) LEC. 3. An overview of information needs, services, and print and electronic resources; ways to teach information literacy skills. May count either EDMD 7120 or EDMD 7126.

EDMD 7130/7136 ADMINISTRATION OF MEDIA AND TECHNOLOGY SERVICES (3) LEC. 3. Functions of and planning for media and technology services. Budget, evaluation, facilities, guidelines, legal issues, personnel and policies.

EDMD 7200/7206 COMPUTER-BASED INSTRUCTIONAL DESIGN (3) LEC. 3. Applying computer-based instructional design skills, students will develop instructional products using desktop publishing, hypermedia and optical technologies. May count either EDMD 7200 or EDMD 7206.

EDMD 7210/7216 INTEGRATION OF TECHNOLOGY INTO CURRICULUM (3) LEC. 3. Learner competence in integration of technology into curriculum, including designing and writing software and plans for using computers in instruction. May count either EDMD 7210 or EDMD 7216.

EDMD 7220/7226 VIDEO-BASED INSTRUCTIONAL DESIGN (3) LEC. 3. Development and integration of video into learning prescriptions. Emphasis on the assigning of video in a total systems approach to curriculum building. May count either EDMD 7220 or EDMD 7226.

EDMD 7230/7236 THEORY AND PRACTICE OF DISTANCE EDUCATION (3) LEC. 3. Theories, concepts, and tools that support distance education, with emphasis on application in design, development, and implementation of distance education instruction. May count either EDMD 7230 or EDMD 7236.

EDMD 7300/7306 RESEARCH IN INSTRUCTIONAL TECHNOLOGY (3) LEC. 3. Pr., ERMA 7200 or FOUN 7200 or ERMA 7206 or FOUN 7206. A forum for sharing research perspectives, exploring processes involved in defining research problems and analyzing research theories, problems, and methods in instructional technology. May count either EDMD 7300 or EDMD 7306.

EDMD 7310/7316 EVALUATION OF MEDIA AND TECHNOLOGY PROGRAMS (3) LEC. 3. Factors contributing to effective media and technology programs. Understanding of research process and experience with media and technology services assumed.

EDMD 7320/7326 ADVANCED INFORMATION SOURCES AND SERVICES (3) LEC. 3. Electronic databases, advanced searching techniques, information representation, and the role of the media specialist in networking and creating electronic information sources. May count either EDMD 7320 or EDMD 7326.

EDMD 7900/7906 DIRECTED STUDIES (1-6) IND. SU. Independent study directed toward desired objectives. Includes evaluation by professor of student's work accomplished at regular intervals.

EDMD 7910/7916 PRACTICUM (1-6) PRA. SU. Experiences closely relating theory and practice, usually conducted in realistic settings. Course may be repeated for a maximum of 6 credit hours.

EDMD 7920/7926 INTERNSHIP (1-6) INT. SU. Pr., P/C, EDMD 7120 and P/C, EDMD 7130. Supervised experience in a school media center or other appropriate setting. These experiences, accompanied by regularly scheduled meetings with the university supervisor, provide evaluation and analysis of the intern experience. Course may be repeated for a maximum of 6 credit hours.

EDMD 7930 TEACHING APPRENTICESHIP (3) SEM. 3. A structured opportunity for students to apply educational media concepts and theories in the college classroom. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

EDMD 7940/7946 DIRECTED FIELD EXPERIENCE (3-6) FLD. SU. Pr., FOUN 7200 or ERMA 7200 or ERMA 7206 or FOUN 7206. Field-based study in the area of media and technology. Addresses a scholarly concern of the student and is conducted using valid research techniques. Course may be repeated for a maximum of 6 credit hours.

EDMD 7970/7976 SPECIAL TOPICS IN INSTRUCTIONAL TECHNOLOGY (3-9) LEC. Opportunity for study of current topics related to the field of instructional technology. Course may be repeated for a maximum of 9 credit hours.

Electrical and Computer En - ELEC

Courses

ELEC 2110 ELECTRIC CIRCUIT ANALYSIS (4) LEC. 3. LAB. 3. Pr., PHYS 1610 and (COMP 1200 or COMP 1210) and P/C, ENGR 1110 and P/C, MATH 2650. Basic laws and concepts; resistive circuits; first-order transient circuits; phasors and frequency response of circuits; RMS values and complex power.

ELEC 2120 LINEAR SIGNALS AND SYSTEMS ANALYSIS (3) LEC. 3. Pr., ELEC 2110 and MATH 2650. Time-domain and frequency-domain methods for modeling and analyzing continuous and discrete-data signals and systems.

ELEC 2200 DIGITAL LOGIC CIRCUITS (3) LEC. 3. Pr., COMP 1200 or COMP 1210. Electronic devices and digital circuits; binary numbers; Boolean algebra and switching functions; gates and flip-flops; combinational and sequential logic circuits; hierarchical design of digital systems; computer-aided design tools for digital design, simulation, and testing.

ELEC 2210 DIGITAL ELECTRONICS (4) LEC. 3. LAB. 3. Pr., ELEC 2110 and ELEC 2200. History of electronics; semiconductors; biasing and operation of PN junction diodes; field-effect transistors and bipolar junction transistors; logic families and logic technologies; flip-flops and memory circuitry.

ELEC 2220 COMPUTER SYSTEMS (3) LEC. 3. Pr., ELEC 2200. Computer hardware/software organization, processor programming models, assembly language programming, design of memory systems, I/O device interfacing and programming and multiprocessing.

ELEC 3030 RF SYSTEMS LAB (1) LAB. 3. Pr., ELEC 2210. Assembly, testing and analysis of an AM radio. Integration of basic concepts of electronics, electromagnetics, and signals and systems.

ELEC 3040 ELECTRICAL SYSTEM DESIGN LAB (1) LAB. 3. Pr., ELEC 2220 and ELEC 3030 and P/C, ELEC 3500. Exploration and integration of electrical engineering concepts and professional practice issues through the design of a contemporary engineering system.

ELEC 3050 EMBEDDED SYSTEM DESIGN LAB (1) LAB. 3. Pr., ELEC 2210 and ELEC 2220. Integration of hardware and software to design of an embedded computing system; development of professional skills.

ELEC 3060 WIRELESS DESIGN LAB (1) LAB. 3. Pr., ELEC 3400. Laboratory experiments geared towards understanding the implementation and testing of components used in wireless communication systems.

ELEC 3310 FUNDAMENTALS OF APPLIED ELECTROMAGNETICS (3) LEC. 3. Pr., MATH 2660 and ELEC 2110. Transmission lines are studied as a bridge to understanding electromagnetic theory. Then, electric and magnetic fields are studied using vector algebra, culminating in Maxwell's equations.

ELEC 3320 ELECTROMAGNETICS FOR WIRELESS COMMUNICATION (3) LEC. 3. Pr., ELEC 3310. Maxwell's equations are used in the study of plane waves, guided waves, fiberoptics, electromagnetic compatibility and interference, antennas and radiation, and satellite communication systems.

ELEC 3400 COMMUNICATION SYSTEMS (3) LEC. 3. Pr., ELEC 3800. Pulse code modulation, line coding, information rate, equalization, amplitude modulation, angle modulation, noise in communication systems.

ELEC 3500 CONTROL SYSTEMS (3) LEC. 3. Pr., ELEC 2120. Analog and discrete transfer function models, system response specifications, control system characteristics, root locus analysis and design, frequency response analysis and design.

ELEC 3600 ELECTRIC POWER ENGINEERING (3) LEC. 3. Pr., ELEC 2110. Introduction to the basic concepts in electric power engineering.

ELEC 3700 ANALOG ELECTRONICS (3) LEC. 3. Pr., ELEC 2210 and ELEC 2120. Amplifier modeling. Design and analysis of single-stage and multistage transistor amplifiers. Biasing for integrated circuit design. Operational amplifier circuits.

ELEC 3800 RANDOM SIGNALS AND SYSTEMS (3) LEC. 3. Pr., ELEC 2120. Introduction to probability, random variables, random processes and basic statistics, analysis of random signals and noise.

ELEC 3810 FUNDAMENTALS OF ELECTRICAL ENGINEERING (3) LEC. 3. Pr., P/C, MATH 2650. Electrical circuit analysis; electronic devices, digital systems, amplifier concepts, power devices and systems. Not open to ECE majors.

ELEC 4000 SENIOR DESIGN PROJECTS (3) LEC. 3. Pr., ELEC 3040 or ELEC 3050 or ELEC 3060. A capstone design project which draws on the accumulated curricular experience. Particular project sections may have additional requisites.

ELEC 4200 DIGITAL SYSTEM DESIGN (3) LEC. 2. LAB. 3. Pr., ELEC 2210 and ELEC 2220. Hierarchical, modular design of digital systems, computer-aided digital system modeling, simulation, analysis, and synthesis; design implementation with programmable logic devices and FPGAs.

ELEC 4800 INSTRUMENTATION ENGINEERING (3) LEC. 2. LAB. 3. Pr., ELEC 3040 or ELEC 3050. Study and application of sensors, instrumentation and computer technology to research and industrial process control.

ELEC 4810 LONG TERM TECHNOLOGY DEVELOPMENT AND PROJECT MANAGEMENT (1-2) LAB. Pr., ELEC 2120. Students participate in ongoing electrical, computer, or wireless engineering design projects and competitions while learning project management and organization strategies. May be repeated for up to three credit hours. Departmental approval.

ELEC 4960 SPECIAL PROBLEMS (1-3) IND. Departmental approval. Course may be repeated with change in topics.

ELEC 4970 SPECIAL TOPICS IN ELECTRICAL ENGINEERING (1-5) LEC. Departmental approval. Course may be repeated with change in topics.

ELEC 4980 SPECIAL PROJECTS IN ELECTRICAL ENGINEERING (1-3) IND. Departmental approval. Course may be repeated with change in topics.

ELEC 4997 HONORS THESIS (1-6) IND. Pr., Honors College. Directed research and writing of honors thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ELEC 5100 WIRELESS COMMUNICATION SYSTEMS (3) LEC. 3. Pr., ELEC 3400. Introduction to mobile cellular radio and wireless personal communications, mobile radio propagation, modulation techniques, multiple access techniques, wireless systems and standards.

ELEC 5110 WIRELESS NETWORKS (3) LEC. 3. Pr., ELEC 3400. Introduction to wireless broadband, satellite communication, wireless local area networks, Bluetooth and Home RF standards and Internet protocol and wireless access.

ELEC 5120 TELECOMMUNICATION NETWORKS (3) LEC. 3. Pr., ELEC 3400. Principles and building blocks of telecommunication systems, including switched telephone networks, voice and data networks, transmission technologies, and switching architectures

ELEC 5130 RF DEVICES AND CIRCUITS (3) LEC. 3. Pr., ELEC 3700. Introduction to RF semiconductor devices and circuits targeted for wireless applications.

ELEC 5150 INFORMATION SECURITY (3) LEC. 3. Emerging protocols, standards and technologies of information security; design of information network security, firewall, virtual private networks and secured applications. Departmental approval.

ELEC 5190 INTRODUCTION TO DIGITAL AND ANALOG IC DESIGN (3) LEC. 3. Pr., ELEC 2210 and ELEC 3700. Digital IC design using the Verilog, analog and mixed signal IC design using industry standard tools; emphasis on front-end design skills.

ELEC 5200 COMPUTER ARCHITECTURE AND DESIGN (3) LEC. 3. Pr., ELEC 4200. Structural organization and hardware design of digital computers; register transfers; micro-operations, control units and timing; instruction set design; input/output devices, multiprocessors, automated hardware design aids.

ELEC 5220 INFORMATION NETWORKS AND TECHNOLOGY (3) LEC. 3. Pr., ELEC 2220 or COMP 3350. Architectures, protocols, standards and technologies of information networks; design and implementation of information networks based on requirements; applications of information networks for data, audio and video communications.

ELEC 5230 PARALLEL PROCESSING (3) LEC. 3. Pr., ELEC 2220 or COMP 3350. Hardware components of multiprocessor systems including processor, inter-connection, memory and control architectures; software elements of parallel processing.

ELEC 5240 NEURAL NETWORKS (3) LEC. 3. Pr., ELEC 2120. Principles, architectures, and technologies of neural networks; design and implementation of neural networks using electronics and optics; applications of neural networks.

ELEC 5250 COMPUTER AIDED DESIGN OF DIGITAL CIRCUITS (3) LEC. 3. Pr., ELEC 2220 or COMP 3350. Computer-automated design of digital logic circuits, using discrete gates, programmable logic devices, and standard cells; hardware description languages, circuit simulation for design verification and analysis, fault diagnosis and testing.

ELEC 5260 EMBEDDED COMPUTING SYSTEMS (3) LEC. 3. Pr., ELEC 2220 or COMP 3350. The design of systems containing embedded computers. Microcontroller technology, assembly language and C programming, input/output interfacing, data acquisition hardware, interrupts, and timing. Real-time operating systems and application programming. Embedded system application examples.

ELEC 5270 LOW-POWER DESIGN OF ELECTRONIC CIRCUITS (3) LEC. 3. Pr., ELEC 2210. Design of digital circuits and systems for reduced power consumption, power analysis algorithms, low-power MOS technologies, low-power design architectures for FPGAs, memory, and microprocessors, reduction of power in testing of circuits. Departmental approval.

ELEC 5280 BUILT-IN-SELF-TEST (3) LEC. 3. Pr., ELEC 2200 and ELEC 2210. Testing during product life-cycle, fault models and detection, design for testability, test pattern generation, output response analysis, concurrent fault detection, manufacturing and system use, built-in self-test approaches and applications.

ELEC 5310 DESIGN OF ANTENNAS AND ANTENNA SYSTEMS (3) LEC. 3. Pr., P/C, ELEC 3320. Application of electromagnetic and circuit concepts to the design of practical antennas and antenna systems.

ELEC 5320 ELECTROMAGNETIC COMPATIBILITY (3) LEC. 3. Pr., ELEC 3320 and ELEC 3700. Electromagnetic noise coupling, designing for electromagnetic compatibility (EMC), EMC regulation, noise sources, standard techniques for eliminating noise, circuit layout for reduced electromagnetic interference (EMI).

ELEC 5340 MICROWAVE AND RF ENGINEERING (3) LEC. 3. Pr., ELEC 3320 and ELEC 3700. Application of electromagnetic and electronic concepts to the design of practical microwave devices and circuits typically used in wireless communications.

ELEC 5350 RADAR PRINCIPLES (3) LEC. 3. Pr., ELEC 3320 and ELEC 3800. Study of the fundamentals of RADAR and related systems such as SONAR and LIDAR.

ELEC 5410 DIGITAL SIGNAL PROCESSING (3) LEC. 3. Pr., ELEC 3800. Digital processing of signals, sampling difference equations, discrete-time Fourier transforms, discrete and fast Fourier transforms, digital filter design.

ELEC 5430 DIGITAL IMAGE PROCESSING (3) LEC. 3. Pr., ELEC 3400 and ELEC 3800. Digital image processing principles and applications such as enhancement, restoration and compression.

ELEC 5530 MOBILE ROBOT DESIGN (3) LEC. 3. Pr., ELEC 2210 and (ELEC 3040 or ELEC 3050). Fundamentals of mobile robot design, including motor control, sensor integration, path planning, navigation, and localization.

ELEC 5610 POWER ELECTRONICS (3) LEC. 3. Pr., ELEC 3700 and ELEC 3600. Power electronic circuits, components, and devices.

ELEC 5620 POWER SYSTEM ANALYSIS (3) LEC. 3. Pr., ELEC 3600. Power system modeling, power flow analysis, analysis of faulted power systems. Departmental approval.

ELEC 5630 ELECTRIC MACHINES (3) LEC. 3. Pr., ELEC 3600. Fundamentals of the electromagnetic-mechanical energy conversion process. Principles of operation, application, and control of ac and dc motors and generators. Departmental approval.

ELEC 5650 POWER SYSTEM PROTECTION (3) LEC. 3. Pr., ELEC 3600. Fault analysis using symmetrical components. Power switchgear, including switches, disconnects, fuses, relays and circuit breakers. Fundamentals of electric power system protection, including bus, transformer and line protection.

ELEC 5700 SEMICONDUCTOR FUNDAMENTALS (3) LEC. 3. Pr., ELEC 3700. Introduction to semiconductors: crystal structure, energy band theory, equilibrium electron and hole statistics, doping, generation and recombination processes, carrier drift and diffusion, transport equations.

ELEC 5710 SEMICONDUCTOR DEVICES (3) LEC. 3. Pr., ELEC 5700. Introduction to semiconductor devices: pn junctions, junction diode based devices, optoelectronic devices, bipolar transistors, field effect transistors.

ELEC 5730 MICROELECTRONIC FABRICATION (3) LEC. 2. LAB. 3. Pr., ELEC 2210. Introduction to monolithic integrated circuit technology. Bipolar and MOS processes and structures. Elements of layout, design, fabrication, and applications. Experiments in microelectronic technologies. Departmental approval.

ELEC 5740 ELECTRONICS MANUFACTURING (3) LEC. 2. LAB. 3. Pr., ELEC 3700. Materials and processes used to manufacture electronic products. Particular attention is given to substrate technology and electronics assembly. Departmental approval.

ELEC 5750 INTRODUCTION TO PLASMA ENGINEERING (3) LEC. 3. Pr., ELEC 3320. Electrical breakdown and discharges in gases, basic plasma theories, applications of plasmas, plasma processing for microelectronic fabrication. Departmental approval.

ELEC 5760 SOLID STATE SENSORS (3) LEC. 3. Pr., ELEC 3700. Theory, technology and design of micro-mechanical sensors, electrochemical microsensors, photodetectors, and integrated smart sensors. Departmental approval.

ELEC 5770 VLSI DESIGN (3) LEC. 3. Pr., ELEC 2210 and ELEC 2220. Review of MOS transistor fundamentals, CMOS logic circuits; VLSI fabrication and design rules; clocking strategies and sequential design; performance estimation; memories and programmable arrays; standard cell design methodologies; computer aided design (CAD) tools.

ELEC 5780 ANALOG CIRCUIT DESIGN (3) LEC. 3. Pr., ELEC 3700. Circuit design techniques used for implementing analog integrated circuits in both CMOS and bipolar technologies. Departmental approval.

ELEC 5810 COMPUTED IMAGING SYSTEMS (3) LEC. 3. Pr., ELEC 2120. Introduction to computed imaging systems such as magnetic resonance imaging (MRI), computed tomography (CT), and synthetic aperture radar (SAR). Departmental approval.

ELEC 5820 MEMS TECHNOLOGY (3) LEC. 3. Introduction to Micro-Electro-Mechanical Systems (MEMS), the study of the materials and microfabrication processes used to fabricate MEMS devices, the principles of operation of MEMS devices, and an introduction to the different application areas of MEMS devices. Departmental approval.

ELEC 5970 SPECIAL TOPICS IN ELECTRICAL ENGINEERING (1-5) LEC. Departmental approval. Course may be repeated with change in topics.

ELEC 6110/6116 WIRELESS NETWORKS (3) LEC. 3. Pr., ELEC 3400. Introduction to wireless broadband, satellite communication, wireless local area networks, Bluetooth and Home RF standards and Internet protocol and wireless access.

ELEC 6120/6126 TELECOMMUNICATION NETWORKS (3) LEC. 3. Pr., ELEC 3400. Plain Old Telephone System (POTS), Public Switching Telephone Network (PSTN), circuit switching, packet switching, frame relay, local subscriber loop, trunk, Signal System 7 (SS7), ISDN, DSL, ATM, SONET, wavelength division multiplexing (WDM), SMDS, voice over IP, network management.

ELEC 6130/6136 RF DEVICES AND CIRCUITS (3) LEC. 3. Pr., ELEC 3700. Introduction to RF semiconductor devices and circuits targeted for wireless applications.

ELEC 6150/6156 INFORMATION SECURITY (3) LEC. 3. Emerging protocols, standards and technologies of information security; design of information network security, firewall, virtual private networks and secured applications. Departmental approval.

ELEC 6190/6196 INTRODUCTION TO DIGITAL AND ANALOG IC DESIGN (3) LEC. 3. Pr., ELEC 2210 and ELEC 3700. Introduction to digital and analog integrated circuit (IC) design with emphasis on front-end IC design skills. Digital IC designs using Verilog hardware description language. Analog IC designs using Cadence analog IC design tools. Gain hands-on experience through digital and analog IC design projects.

ELEC 6200/6206 COMPUTER ARCHITECTURE AND DESIGN (3) LEC. 3. Pr., ELEC 4200. Structural organization and hardware design of digital computers; register transfers; micro-operations, control units and timing; instruction set design; input/output devices, multiprocessors, automated hardware design aids.

ELEC 6220/6226 INFORMATION NETWORKS AND TECHNOLOGY (3) LEC. 3. Pr., ELEC 2220 or COMP 3350. Architectures, protocols, standards and technologies of information networks; design and implementation of information networks based on requirements; applications of information networks for data, audio and video communications.

ELEC 6230/6236 PARALLEL PROCESSING (3) LEC. 3. Pr., ELEC 2220 or COMP 3350. Hardware components of multiprocessor systems including processor, inter-connection, memory and control architectures; software elements of parallel processing.

ELEC 6240/6246 NEURAL NETWORKS (3) LEC. 3. Pr., ELEC 2120. Principles, architectures, and technologies of neural networks; design and implementation of neural networks using electronics and optics; applications of neural networks.

ELEC 6250/6256 COMPUTER AIDED DESIGN OF DIGITAL CIRCUITS (3) LEC. 3. Pr., ELEC 2220 or COMP 3350. Computer-automated design of digital logic circuits, using discrete gates, programmable logic devices, and standard cells; hardware description languages, circuit simulation for design verification and analysis, fault diagnosis and testing.

ELEC 6260/6266 EMBEDDED COMPUTING SYSTEMS (3) LEC. 3. Pr., ELEC 2220 or COMP 3350. The design of systems containing embedded computers. Microcontroller technology, assembly language and C programming, input/output interfacing, data acquisition hardware, interrupts, and timing. Real-time operating systems and application programming. Embedded system application examples.

ELEC 6270/6276 LOW-POWER DESIGN OF ELECTRONIC CIRCUITS (3) LEC. 3. Pr., ELEC 2210. Design of digital circuits and systems for reduced power consumption, power analysis algorithms, low-power MOS technologies, low-power design architectures for FPGAs, memory, and microprocessors, reduction of power in testing of circuits. Departmental approval.

ELEC 6280/6286 BUILT-IN-SELF-TEST (3) LEC. 3. Pr., ELEC 2200 and ELEC 2210. Testing during product life-cycle, fault models and detection, design for testability, test pattern generation, output response analysis, concurrent fault detection, manufacturing and system use, built-in self-test approaches and applications.

ELEC 6310/6316 DESIGN OF ANTENNAS AND ANTENNA SYSTEMS (3) LEC. 3. Pr., P/C, ELEC 3320. Application of electromagnetic and circuit concepts to the design of practical antennas and antenna systems.

ELEC 6320/6326 ELECTROMAGNETIC COMPATIBILITY (3) LEC. 3. Pr., ELEC 3320 and ELEC 3700. Electromagnetic noise coupling, designing for electromagnetic compatibility (EMC), EMC regulation, noise sources, standard techniques for eliminating noise, circuit layout for reduced electromagnetic interference (EMI).

ELEC 6340/6346 MICROWAVE AND RF ENGINEERING (3) LEC. 3. Pr., ELEC 3320 and ELEC 3700. Application of electromagnetic and electronic concepts to the design of practical microwave devices and circuits typically used in wireless communications.

ELEC 6350/6356 RADAR PRINCIPLES (3) LEC. 3. Pr., ELEC 3320 and ELEC 3800. Study of the fundamentals of RADAR and related systems such as SONAR and LIDAR.

ELEC 6410/6416 DIGITAL SIGNAL PROCESSING (3) LEC. 3. Pr., ELEC 3800. Digital processing of signals, sampling difference equations, discrete-time Fourier transforms, discrete and fast Fourier transforms, digital filter design.

ELEC 6430/6436 DIGITAL IMAGE PROCESSING (3) LEC. 3. Pr., ELEC 3400 and ELEC 3800. Digital image processing principles and applications such as enhancement, restoration and compression.

ELEC 6530/6536 MOBILE ROBOT DESIGN (3) LEC. 3. Pr., ELEC 2210 and (ELEC 3040 or ELEC 3050). Fundamentals of mobile robot design, including motor control, sensor integration, path planning, navigation, and localization.

ELEC 6610/6616 POWER ELECTRONICS (3) LEC. 3. Pr., ELEC 3600 and ELEC 3700. Power electronic circuits, components, and devices.

ELEC 6620/6626 POWER SYSTEM ANALYSIS (3) LEC. 3. Pr., ELEC 3600. Power system modeling, power flow analysis, analysis of faulted power systems. Departmental approval.

ELEC 6630/6636 ELECTRIC MACHINES (3) LEC. 3. Pr., ELEC 3600. Fundamentals of the electromagnetic-mechanical energy conversion process. Principles of operation, application, and control of ac and dc motors and generators. Departmental approval.

ELEC 6650/6656 POWER SYSTEM PROTECTION (3) LEC. 3. Pr., ELEC 3600. Fault analysis using symmetrical components. Power switchgear, including switches, disconnects, fuses, relays and circuit breakers. Fundamentals of electric power system protection, including bus, transformer and line protection.

ELEC 6700/6706 SEMICONDUCTOR FUNDAMENTALS (3) LEC. 3. Pr., ELEC 3700. Introduction to semiconductors: crystal structure, energy band theory, equilibrium electron and hole statistics, doping, generation and recombination processes, carrier drift and diffusion, transport equations.

ELEC 6710/6716 SEMICONDUCTOR DEVICES (3) LEC. 3. Pr., ELEC 5700 or ELEC 6700 or ELEC 6706. Introduction to semiconductor devices: pn junctions, junction diode based devices, optoelectronic devices, bipolar transistors, field effect transistors.

ELEC 6730/6736 MICROELECTRONIC FABRICATION (3) LEC. 2. LAB. 3. Pr., ELEC 2210. Introduction to monolithic integrated circuit technology. Bipolar and MOS processes and structures. Elements of layout, design, fabrication, and applications. Experiments in microelectronic technologies. Departmental approval.

ELEC 6740/6746 ELECTRONICS MANUFACTURING (3) LEC. 2. LAB. 3. Pr., ELEC 3700. Materials and processes used to manufacture electronic products. Particular attention is given to substrate technology and electronics assembly. Departmental approval.

ELEC 6750/6756 INTRODUCTION TO PLASMA ENGINEERING (3) LEC. 3. Pr., ELEC 3320. Electrical breakdown and discharges in gases, basic plasma theories, applications of plasmas, plasma processing for microelectronic fabrication. Departmental approval.

ELEC 6760/6766 SOLID STATE SENSORS (3) LEC. 3. Pr., ELEC 3700. Theory, technology and design of micro-mechanical sensors, electrochemical microsensors, photodetectors, and integrated smart sensors. Departmental approval.

ELEC 6770/6776 VLSI DESIGN (3) LEC. 3. Pr., ELEC 2210 and ELEC 2220. Review of MOS transistor fundamentals, CMOS logic circuits; VLSI fabrication and design rules; clocking strategies and sequential design; performance estimation; memories and programmable arrays; standard cell design methodologies; computer aided design (CAD) tools.

ELEC 6780/6786 ANALOG CIRCUIT DESIGN (3) LEC. 3. Pr., ELEC 3700. Circuit design techniques used for implementing analog integrated circuits in both CMOS and bipolar technologies. Departmental approval.

ELEC 6810/6816 COMPUTED IMAGING SYSTEMS (3) LEC. 3. Pr., ELEC 2120. Introduction to computed imaging systems such as magnetic resonance imaging (MRI), computed tomography (CT), and synthetic aperture radar (SAR). Departmental approval.

ELEC 6820/6826 MEMS TECHNOLOGY (3) LEC. 3. Introduction to Micro-Electro-Mechanical Systems (MEMS), the study of the materials and microfabrication processes used to fabricate MEMS devices, the principles of operation of MEMS devices, and an introduction to the different application areas of MEMS devices. Departmental approval.

ELEC 6970/6976 SPECIAL TOPICS IN ELECTRICAL ENGINEERING (1-5) LEC. Study of a specialized area of electrical & computer engineering not covered by regularly offered courses. Course may be repeated with change in topics. Departmental approval. Course may be repeated for a maximum of 5 credit hours.

ELEC 7190/7196 ADVANCED RFIC DESIGN FOR WIRELESS COMMUNICATIONS (3) LEC. Pr., ELEC 5190 or ELEC 6190 or ELEC 6196. Wireless standards and multi-standard transceiver architectures, SiGe and CMOS RFIC designs for wireless transceiver building blocks, software defined radios, phase array radars, ultra-high speed data converters, and MIMO wireless transceivers.

ELEC 7250/7256 VLSI TESTING (3) LEC. 3. Pr., ELEC 5770 or ELEC 6770 or ELEC 6776. Exponential nature of the test problem, fault models, test generation algorithms, test generation for sequential circuits, fault simulation, testability measures, fault coverage, yield and defect levels, design-for-testability approaches.

ELEC 7310/7316 ADVANCED ELECTRODYNAMICS I (3) LEC. 3. Review of basic electromagnetics. Electromagnetic wave propagation in infinite and bounded media. Equivalence Principle, Uniqueness Theorem, Reciprocity, Green's functions and Plane wave functions. Departmental approval.

ELEC 7320/7326 ADVANCED ELECTRODYNAMICS II (3) LEC. 3. Pr., ELEC 7310 or ELEC 7316. Cylindrical wave functions. Spherical wave functions. Scattering by cylinders and spheres. Perturbational and variational techniques.

ELEC 7340/7346 COMPUTATIONAL ELECTROMAGNETICS I (3) LEC. 3. Pr., ELEC 7310 or ELEC 7316. Solution of electromagnetic scattering, radiation, and coupling problems using method of moments, finite-difference, finite-element, transmission-line matrix and other advanced computational methods.

ELEC 7350/7356 COMPUTATIONAL ELECTROMAGNETICS II (3) LEC. 3. Pr., ELEC 7310 or ELEC 7316. Solutions of electromagnetic scattering, radiation, and coupling problems using a variety of common asymptotic techniques.

ELEC 7410/7416 STOCHASTIC SIGNAL AND SYSTEM ANALYSIS (3) LEC. 3. Applications of probability, random variables and stochastic processes in electrical engineering. Departmental approval.

ELEC 7420/7426 ADAPTIVE SIGNAL PROCESSING (3) LEC. 3. Coreq., ELEC 7410. Least mean square and recursive least square algorithms; adaptive FIR and IIR filters, lattice filters, Kalman filters; adaptive system identification and its application in communications and control.

ELEC 7430/7436 ADVANCED COMMUNICATION THEORY (3) LEC. 3. Pr., ELEC 3400. Principles of modern communication systems. Elements of information theory, source encoding, efficient signaling with coded waveforms, convolutional codes; carrier recovery and synchronization under AGN channel; adaptive equalization; maximum likelihood estimation, Viterbi algorithm.

ELEC 7440/7446 WIRELESS COMMUNICATION THEORY (3) LEC. 3. Pr., ELEC 3400 or ELEC 7410. The basic of design, analysis and performance limits of wireless communication systems.

ELEC 7500/7506 STATE-VARIABLE ANALYSIS OF SYSTEMS (3) LEC. 3. Matrices and linear spaces; state variable for linear continuous and discrete systems; applications in analysis and design of control systems. Departmental approval.

ELEC 7520/7526 ADVANCED DISCRETE CONTROL (3) LEC. 3. Discrete state modeling. Pole assignment and estimation. Multi-rate sampled systems. Non-synchronous sampled systems. MIMO. Departmental approval.

ELEC 7560/7566 NONLINEAR SYSTEMS AND CONTROL (3) LEC. 3. Pr., ELEC 7500 or ELEC 7506. Principles of nonlinear system modeling and analysis; nonlinear control systems design; nonlinear system state estimation. Departmental approval.

ELEC 7610/7616 POWER SYSTEM DYNAMICS AND STABILITY (3) LEC. 3. Pr., (ELEC 5620 or ELEC 6620 or ELEC 6626) and (ELEC 5650 or ELEC 6650 or ELEC 6656). Dynamic models of power systems and analysis of power system stability. Departmental approval.

ELEC 7620/7626 POWER SYSTEM OPERATION (3) LEC. 3. Pr., ELEC 5620 or ELEC 6620 or ELEC 6626. Unit commitment, power system security, state estimation, power system control centers and real-time applications. Departmental approval.

ELEC 7630/7636 ADVANCED ELECTRIC MACHINES (3) LEC. 3. Pr., ELEC 5630 or ELEC 6630 or ELEC 6636. Advanced machine modeling, including Kron's generalized machine theory, Park's transformation, and generalized coordinate transformations. Derivation of traditional machine models. Machine non-linearities, including finite element analysis. Departmental approval.

ELEC 7640/7646 POWER SYSTEM TRANSIENTS (3) LEC. 3. Pr., ELEC 5620 or ELEC 6620 or ELEC 6626. Transients in electric power systems, including lightning and switching phenomena. Traveling waves on power transmission lines, BIL, BSL, line insulation. System modeling. Departmental approval.

ELEC 7710/7716 THE FIELD-EFFECT TRANSISTOR (3) LEC. 3. Pr., ELEC 5710 or ELEC 6710 or ELEC 6716. Advanced treatment of the modern field-effect transistor: the state-of-the-art, the MOS capacitor, the 4-terminal MOSFET, short and narrow-channel effects, reliability, scaling theory, modeling, silicon-on-insulator technology, heterostructure devices.

ELEC 7720/7726 THE BIPOLAR TRANSISTOR (3) LEC. 3. Pr., ELEC 5710 or ELEC 6710 or ELEC 6716. Advanced treatment of the modern bipolar junction transistor; the state-of-the-art, terminal currents, solutions for arbitrary doping profiles, the polysilicon emitter contact, high-injector effects, dynamic operation, device models, heterojunction bipolar transistors.

ELEC 7730/7736 ADVANCED PLASMA PROCESSING FOR MICROELECTRONIC FABRICATION (3) LEC. 3. Pr., ELEC 5750 or ELEC 6750 or ELEC 6756. Plasma reactor design and process optimization, plasma-assisted etching and deposition processes, plasma-assisted oxidation and surface modification processes, plasma polymerization, plasma-induced damages to semiconductor devices. Departmental approval.

ELEC 7740/7746 ELECTRONIC PACKAGING (3) LEC. 3. Pr., ELEC 5740 or ELEC 6740 or ELEC 6746. Design issues in the packaging of electronics. Emphasis is placed on physical design, electrical performance, thermal characteristics and mechanical stress-induced failures. Departmental approval.

ELEC 7750/7756 LOW TEMPERATURE ELECTRONICS (3) LEC. 3. Pr., ELEC 5710 or ELEC 6710 or ELEC 6716. Advanced treatment of electronic devices operating at reduced temperatures: the case for cryogenic computers, semiconductor physics at low temperatures, carrier freeze-out, cooled CMOS technology, cooled bipolar technology, superconductors, packaging.

ELEC 7760/7766 SILICON-BASED HETEROSTRUCTURE DEVICES AND CIRCUITS (3) LEC. 3. Pr., ELEC 5700 or ELEC 6700 or ELEC 6706. Bandgap engineering, strained SiGe and Si, SiGe BiCMOS technology, noise, linearity, circuits applications. Departmental approval.

ELEC 7770/7776 ADVANCED VLSI DESIGN (3) LEC. 3. Pr., ELEC 5770 or ELEC 6770 or ELEC 6776. Review of CMOS logic circuits; impact of fabrication issues on design; high speed switching circuits; high performance memory structures; advanced clocking strategies and clock distribution; performance optimization; deep submicron design issues; ASIC design flow: logic synthesis, placement and routing; design verification; low power design. Departmental approval.

ELEC 7780/7786 RF MICROELECTRONICS (3) LEC. 3. Pr., ELEC 5780 or ELEC 6780 or ELEC 6786. Techniques used in the design of monolithic integrated circuits for RF applications. Departmental approval.

ELEC 7800/7806 ADVANCED COMPUTATIONAL TECHNIQUES FOR ELECTRICAL ENGINEERING (3) LEC. 3. Pr., ELEC 2120 and ELEC 3320. Introduction to high level programming techniques in electrical engineering applications; topics include linear systems analysis, system identification, nonlinear dynamic systems, and electromagnetic applications.

ELEC 7900 INDEPENDENT STUDY IN ELECTRICAL ENGINEERING (1-3) IND. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

ELEC 7950 ELECTRICAL ENGINEERING SEMINAR (1-10) SEM. SU. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

ELEC 7970/7976 SPECIAL TOPICS IN ELECTRICAL ENGINEERING (1-5) LEC. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

ELEC 7980 MASTER OF ELECTRICAL ENGINEERING PROJECT (1-6) IND. SU. Formulation and implementation of an engineering design project. Project culminates in both a written report and an oral presentation to the student's advisory committee. Departmental approval. Course may be repeated with change in topics.

ELEC 7990 RESEARCH AND THESIS (1-6) MST. Course may be repeated for a maximum of 6 credit hours.

ELEC 8120/8126 PRINCIPLES OF NETWORK PERFORMANCE ANALYSIS (3) LEC. 3. Pr., (ELEC 5120 or ELEC 6120 or ELEC 6126) and ELEC 7410. Data network performance analysis, queueing systems, admission control, network traffic modeling, network calculus, flow and congestion control, wireless network analysis, and network simulation.

ELEC 8410 SPECTRAL ESTIMATION AND SYSTEM IDENTIFICATION (3) LEC. 3. Pr., ELEC 7410 or ELEC 7416. Elements of parameter estimation theory; Nonparametric spectral estimation: periodogram and spectral windows; Parametric approaches; applications; higher-order spectral analysis; input-output system identification.

ELEC 8420 DETECTION AND ESTIMATION THEORY (3) LEC. 3. Pr., ELEC 7410 or ELEC 7416. Decision theory concepts. Detection of deterministic and random signals in noise; parameter estimation. Bayesian and maximum likelihood approaches, non-random and random parameter estimation; signal estimation.

ELEC 8560 ADAPTIVE CONTROL (3) LEC. 3. Pr., ELEC 7500 or ELEC 7506. Theory and application of adaptive control systems. Real-time parameter estimation, self-tuning regulators, model-reference adaptive systems, stability, auto-tuning and gain scheduling controllers. Departmental approval.

ELEC 8710 ADVANCED TOPICS IN SEMICONDUCTOR DEVICES (3) LEC. 3. Pr., ELEC 5710 or ELEC 6710 or ELEC 6716. Advanced treatment of selected topics in semiconductor devices. Course may be repeated for a maximum of 6 credit hours.

ELEC 8780 CONTEMPORARY TOPICS IN ELECTRICAL CIRCUIT DESIGN (3) LEC. 3. Pr., ELEC 5780 or ELEC 6780 or ELEC 6786. Contemporary topics in electronic circuit design such as Delta-Sigma A/D and D/A conversion, switched capacitor circuitry, continuous time and discrete time filter design, communications electronics. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ELEC 8900 INDEPENDENT STUDY IN ELECTRICAL ENGINEERING (1-3) IND. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

ELEC 8970 SPECIAL TOPICS IN ELECTRICAL ENGINEERING (1-5) LEC. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

ELEC 8990 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated for a maximum of 20 credit hours.

Elementary Education - CTEE

Courses

CTEE 3100 INTRODUCTION TO ELEMENTARY EDUCATION (3) LEC. 3. Admission to Teacher Education. Knowledge, skills, and dispositions necessary for elementary education, with emphasis on professional expectations and school structure.

CTEE 4010 CURRICULUM: SOCIAL SCIENCE (3) LEC. 2. LAB. 3. Admission to Teacher Education. Exploration and pedagogy for age-appropriate instruction of children in kindergarten through grade six in order to develop rational and participatory citizens.

CTEE 4020 CURRICULUM: LANGUAGE ARTS (3) LEC. 2. LAB. 3. Admission to Teacher Education. Content and methodology of teaching language arts (reading, writing, listening, speaking, and viewing) in kindergarten through grade six in order to develop communicative competence.

CTEE 4030 CURRICULUM: NATURAL SCIENCE (3) LEC. 2. LAB. 3. Admission to Teacher Education. Coreq., CTEE 4040 Current trends, practices and methods in teaching science in the elementary school.

CTEE 4040 CURRICULUM: MATHEMATICS (3) LEC. 2. LAB. 3. Admission to Teacher Education. Coreq., CTEE 4030 Principles, current thinking and approaches to the teaching of elementary school mathematics.

CTEE 4190 EFFECTIVE CLASSROOM MANAGEMENT IN THE ELEMENTARY SCHOOL (3) LEC. 2. LAB. 2. Admission to Teacher Education. Through exploration, discussion, reflection, and analysis students will study issues pertaining to inclusive/ multicultural K-6 classrooms. Issues related to classroom management (e.g. behavior and time management), students with special needs, parent/ community relations, legal mandates, technology, planning, and professionalism.

CTEE 4900 DIRECTED STUDIES (1-6) IND. SU. Reading, research, or other work undertaken by a student focused on a content area of special interest. The student is directed by a faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTEE 4910 PRACTICUM (1-6) AAB/PRA. SU. Students and faculty cooperatively select an appropriate field experience. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTEE 4920/4923 INTERNSHIP (10) AAB/INT. 10. SU. Pr., P/C, CTEE 4950 or P/C, CTEE 4953. Admission to Teacher Education. Supervised teaching in a public elementary school accompanied by scheduled discussions to analyze and evaluate the intern's experience. Admission to internship. May count either CTEE 4920 or CTEE 4923.

CTEE 4950/4953 PROFESSIONAL DEVELOPMENT SEMINAR (1-4) AAB/SEM. 1. SU. Pr., P/C, CTEE 4920 or P/C, CTEE 4923. Admission to Teacher Education. Reflection, exploration, and study of elementary education practices in kindergarten through grade six. May count either CTEE 4950 or CTEE 4953. Course may be repeated for a maximum of 4 credit hours.

CTEE 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. Individual readings program. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CTEE 4970 SPECIAL TOPICS (1-6) AAB/LEC. Cooperatively selected concepts and theories pursued, normally in small groups. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTEE 4997 HONORS THESIS (1-3) IND. Pr., Honors College. The student thesis is finalized in this course. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CTEE 7010/7016 APPROACHES TO TEACHING (3) LEC. 3. Organizational patterns, planning and approaches to instruction in the elementary school.

CTEE 7410/7416 CURRICULUM AND TEACHING IN SOCIAL SCIENCE (GRADES K-6) (3) LEC. 3. Teaching practices and re-appraisal of selecting experiences and content for curriculum improvement in (K-6) social science education. May count either CTEE 7410 or CTEE 7416.

CTEE 7420/7426 CURRICULUM AND TEACHING IN LANGUAGE ARTS (GRADES K-6) (3) LEC. 3. Teaching practices and re-appraisal of selecting experiences and content for curriculum improvement in (K-6) language arts education. May count either CTEE 7420 or CTEE 7426.

CTEE 7430/7436 CURRICULUM AND TEACHING IN NATURAL SCIENCE (GRADES K-6) (3) LEC. 3. Teaching practices and re-appraisal of selecting experiences and content for curriculum improvement in (K-6) natural science education. May count either CTEE 7430 or CTEE 7436.

CTEE 7440/7446 CURRICULUM AND TEACHING IN MATHEMATICS (GRADES K-6) (3) LEC. 3. Teaching practices and re-appraisal of selecting experiences and content for curriculum improvement in (K-6) mathematics education. May count either CTEE 7440 or CTEE 7446.

CTEE 7490 THE ELEMENTARY SCHOOL PROGRAM (3) LEC. 3. Major curriculum areas and teaching practices in the modern elementary school. Implications of research and theory for the total elementary school program.

CTEE 7510/7516 RESEARCH STUDIES IN EDUCATION IN AREAS OF SPECIALIZATION (3) LEC. 3. A review, analysis and interpretation of data with emphasis on designing research to meet the changing needs of the school. May count either CTEE 7510 or CTEE 7516.

CTEE 7530/7536 ORGANIZATION OF PROGRAMS IN ELEMENTARY EDUCATION (3) LEC. 3. Organization and development of basic and supplementary materials for guiding teachers and school systems in improvement of curriculum and teaching practices. May count either CTEE 7530 or CTEE 7536.

CTEE 7540/7546 EVALUATION OF PROGRAMS IN AREAS OF SPECIALIZATION (3) LEC. 3. Evaluation methods and exploration of evaluation literature in areas of specialization. May count either CTEE 7540 or CTEE 7546.

CTEE 7900 DIRECTED STUDIES (1-6) IND. SU. Independent study related to student's respective areas of specialization. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTEE 7910/7916 PRACTICUM IN AREA OF SPECIALIZATION (1-6) AAB/PRA. SU. Provides individual students with experience relating theory and practice, usually in a school setting. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTEE 7920 INTERNSHIP (1-9) INT. SU. Supervised on-the-job experiences in a school, college or other appropriate setting, accompanied by regularly scheduled, on-campus discussion periods. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

CTEE 7970/7976 SPECIAL TOPICS (1-6) AAB. Cooperative pursuit of selected concepts and theories, normally in small groups. May count either CTEE 7970 or CTEE 7979. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTEE 7990/7996 RESEARCH AND THESIS (1-10) MST. Course may be repeated for a maximum of 10 credit hours.

CTEE 8950 SEMINAR (3) SEM. 3. Selected concepts and theoretical formulations of common interest. Course may be repeated for a maximum of 12 credit hours.

CTEE 8970 SPECIAL TOPICS (1-6) LEC. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTEE 8980 FIELD PROJECT (1-10) FLD. SU. Course may be repeated for a maximum of 10 credit hours.

CTEE 8990/8996 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated for a maximum of 20 credit hours.

Engineering - ENGR

Courses

ENGR 1100 ENGINEERING ORIENTATION (0) LEC. 1. SU. Introduction to the College of Engineering and its resources, exploration of engineering careers, orientation to campus resources and facilities, and assistance with academics and transition to college.

ENGR 1110/1113 INTRODUCTION TO ENGINEERING (2) LEC. 1. LAB. 3. Introduction to engineering design, engineering teams, graphical presentation, technical writing, oral presentation. May count either ENGR 1110 or ENGR 1113.

ENGR 1200 GRAPHICAL COMMUNICATION AND DESIGN (3) LEC. 2. LAB. 3. Pr., P/C, COMP 1200. Graphical concepts and projective geometry relating to special visualization and communication in design, including technical sketching, instrument drawing and computer-aided drafting and design.

ENGR 2010 THERMODYNAMICS (3) LEC. 2. LAB. 3. Pr., (CHEM 1030 or CHEM 1110 or CHEM 1117) and (MATH 1620 or MATH 1627 or MATH 1720) and (P/C, PHYS 1600 or P/C, PHYS 1607). Principles and applications of thermodynamics to engineering problems. Laboratory includes multi-disciplinary team projects on thermodynamics applications and fundamentals of engineering thermodynamics.

ENGR 2050/2053/2054 STATICS (3) LEC. 3. Pr., PHYS 1600 or PHYS 1607 and P/C, MATH 2630 or P/C, MATH 2637. Principles of vectors, forces, moments, free body diagrams, force systems, 2-D and 3-D equilibrium, friction, geometric properties of plane areas.

ENGR 2070 MECHANICS OF MATERIALS (3) LEC. 3. Pr., ENGR 2050 and P/C, MATH 2650. Principles of stress and strain; stress-strain relationships; uniaxially loaded members; torsion; bending; beam shear; shear, moment and thrust diagrams; transformed sections; column buckling.

ENGR 2100 FUNDAMENTALS OF ENGINEERING MECHANICS (3) LEC. 3. Pr., P/C, PHYS 1600 or P/C, PHYS 1607. Basic principles of two-dimensional force systems, free body diagrams, concepts of stress and strain, centroids of composite areas, kinematics and kinetics of particles and rigid bodies.

ENGR 2200 INTRODUCTION TO THERMODYNAMICS, FLUIDS AND HEAT TRANSFER (3) LEC. 3. Pr., CHEM 1030 and PHYS 1610 and P/C, MATH 2650. Principles and applications of thermodynamics, fluids and heat transfer.

ENGR 2350 DYNAMICS (3) LEC. 3. Pr., ENGR 2050. Fundamental principles of dynamics including kinematics and kinetics of particles, kinematics and kinetics of rigid bodies, mass moments of inertia, three-dimensional dynamics of rigid bodies, and simple harmonic motion.

ENGR 2700 NUCLEAR POWER OPERATIONS, SYSTEM AND CAREERS (1) LEC. 1. SU. Pr., P/C, MATH 1610 or P/C, MATH 1617. Overview of nuclear power generation systems including civilian and government career options.

ENGR 3510 INTRODUCTION TO BUSINESS AND ENGINEERING (3) LEC. 3. Pr., ACCT 2110 or ACCT 2117. Pr., admission to the BET minor program by application; restricted to BET students. Principles of business and engineering issues in new product and business development.

ENGR 3520 INTEGRATING BUSINESS AND ENGINEERING THEORY WITH PRACTICE (3) LEC. 2. LAB. 3. Pr., BUSI/ENGR 3510 and in good standing in the BET minor program; restricted to BET students. Case study problems from business and engineering practice.

ENGR 3710 BASIC NUCLEAR I: NUCLEAR AND MECHANICAL SYSTEMS (4) LEC. 3. LAB. 1. Pr., P/C, ENGR 2700 and P/C, PHYS 1500 or (P/C, PHYS 1600 or P/C, PHYS 1607). Multidisciplinary course teaching fundamental nuclear and mechanical principles as they are utilized in the nuclear power generation industry.

ENGR 3720 BASIC NUCLEAR II: MATERIALS, ELECTRIC, ELECTRONICS (4) LEC. 3. LAB. 2.5. Pr., ENGR 2700 and PHYS 1500 or P/C, PHYS 1600 or P/C, PHYS 1607. Multidisciplinary course teaching fundamental electronic and electrical theory and materials theory as practiced in nuclear power generation industry.

ENGR 3970 SPECIAL TOPICS: ENGINEERING, TECHNOLOGY AND SOCIETY - SPAIN (1-4) AAB/LLB. Special topics of interest within a global engineering context. Course may be repeated for a maximum of 9 credit hours.

ENGR 4710 ADVANCED REACTOR OPERATIONS I: HEALTH AND SAFETY (4) LEC. 3. LAB. 2.5. Pr., P/C, ENGR 2700 and P/C, PHYS 1500 or P/C, PHYS 1600 or P/C, PHYS 1607. Advanced safety topics within regulatory and training structure of nuclear power industry.

ENGR 4720 ADVANCED REACTOR OPERATIONS II: SAFE OPERATIONS (3) LEC. 3. Pr., P/C, ENGR 2700. Nuclear power plant operations are discussed in detail, with a strong emphasis on safety compliance and industry's safety culture.

ENGR 4721 ADVANCED REACTOR PLANT OPERATIONS II (1) LAB. 2.5. Pr., P/C, ENGR 4710. Nuclear power plant operations are discussed with a strong emphasis on safety compliance and industry's safety culture. Focus is hands-on practical factors.

ENGR 4957 ENGINEERING HONORS SEMINAR (3) SEM. 3. Pr., Honors College. Topics of interest to honors students and engineering faculty. Interaction with successful engineering alumni. Departmental approval.

ENGR 4970 PRODUCT/PROCESS DESIGN AND DEVELOPMENT I (1) LAB. 3. Coreq., BUSI 4540. Processes to develop and present design proposal for cooperating industry. Credit will not be given for both BUSI 4970 and ENGR 4970.

ENGR 4980 PRODUCT/PROCESS DESIGN AND DEVELOPMENT II (3) LEC. 1. LAB. 6. Pr., BUSI 4970 or ENGR 4970. Cross-functional team design projects sponsoring industry.

English - ENGL

Courses

ENGL 1100 ENGLISH COMPOSITION I (3) LEC. 3. English Composition Core. Intensive study of and practice in effective expository and argumentative writing. May not be taken concurrently.

ENGL 1107 HONORS WRITING SEMINAR I (3) LEC. 3. Pr., Honors College. English Composition Core. Topics in writing for students in Honors.

ENGL 1120 ENGLISH COMPOSITION II (3) LEC. 3. Pr., ENGL 1100 or ENGL 1107. English Composition core. Emphasis on research. May not be taken concurrently.

ENGL 1127 HONORS WRITING SEMINAR II (3) LEC. 3. Pr., Honors College. ENGL 1100 or ENGL 1107. English Composition core. Emphasis on research.

ENGL 2000 INTRODUCTION TO CREATIVE WRITING (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. An introduction to the genres of creative writing.

ENGL 2010 INTRODUCTION TO PROFESSIONAL WRITING (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. An introduction to the disciplines of professional writing.

ENGL 2200 WORLD LITERATURE BEFORE 1600 (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. Culturally diverse readings in world literature from the ancient period to c. 1600.

ENGL 2207 HONORS WORLD LITERATURE BEFORE 1600 (3) LEC. 3. Pr., Honors College. ENGL 1120 or ENGL 1127. Culturally diverse readings in world literature from the ancient period to c. 1600.

ENGL 2210 WORLD LITERATURE AFTER 1600 (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. Culturally diverse readings in world literature from c. 1600 to the present.

ENGL 2217 HONORS WORLD LITERATURE AFTER 1600 (3) LEC. 3. Pr., Honors College. ENGL 1120 or ENGL 1127. Culturally diverse readings in world literature from c. 1600 to the present.

ENGL 2230 BRITISH LITERATURE BEFORE 1789 (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. A survey of British Literature from its beginnings to the end of the eighteenth century.

ENGL 2240 BRITISH LITERATURE AFTER 1789 (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. A survey of British Literature from the end of the eighteenth century to the present.

ENGL 2250 AMERICAN LITERATURE BEFORE 1865 (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. A survey of American Literature from its beginnings to 1865.

ENGL 2260 AMERICAN LITERATURE AFTER 1865 (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. A survey of American Literature from 1865 to the present.

ENGL 3040 TECHNICAL WRITING (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. Writing in engineering, scientific, and technical fields. Credit will not be given for both ENGL 3040 and ENGL 3080.

ENGL 3080 BUSINESS WRITING (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. Writing in business, management, or governmental service fields. Credit will not be given for ENGL 3080 and ENGL 3040.

ENGL 3110 SURVEY OF LINGUISTICS (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. The structure of language, especially American English sounds, words, and syntax, along with study in such areas as dialects and language change.

ENGL 3120 SURVEY OF RHETORIC (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A survey of rhetoric from Ancient Greece to the present.

ENGL 3130 SURVEY OF CRITICAL THEORY (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Introduction to critical methods and theoretical approaches to the study of literature.

ENGL 3360 THE BIBLE FOR STUDENTS OF LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Biblical backgrounds to English and American literature; the Bible as literature.

ENGL 3710 SURVEY OF AFRICAN-AMERICAN LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. African American literature from its beginnings to the present.

ENGL 3850 STUDY IN LONDON (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. Study abroad in London providing an introduction to London's and England's literature and culture.

ENGL 3870 WORLD ENGLISH LITERATURES (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Non-British and non-American literature written in English.

ENGL 3890 WRITING CENTER THEORY AND PRACTICE (3) SEM. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250. Introduction to writing center theory, pedagogy, and history.

ENGL 4000 ADVANCED COMPOSITION (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Theory and practice of expository and argumentative writing.

ENGL 4010 TOPICS IN WRITING (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. An in-depth study of a specific topic of writing. Course may be repeated for a maximum of 6 credit hours.

ENGL 4020 TECHNICAL AND PROFESSIONAL EDITING (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127 and ENGL 2010. A technical writing, business writing, or advanced composition course, or departmental approval. Introduction to technical and professional editing.

ENGL 4030 INTERPRETING TEXTS (3) LAB. 3. Pr., ENGL 1120 or ENGL 1127 and ENGL 2010. A technical writing, business writing, or advanced composition course or departmental approval. Document design in technical and professional communication.

ENGL 4040 PUBLIC WRITING (3) LAB. 3. A technical writing, business writing, or advanced composition course or departmental approval. Writing in the public sphere.

ENGL 4140 LANGUAGE VARIATION (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Social, regional, and contextual forces that contribute to dialect diversity.

ENGL 4150 TOPICS IN LANGUAGE STUDY (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Concentrated investigation of varying topics in linguistics or rhetoric. Course may be repeated for a maximum of 6 credit hours.

ENGL 4160 TECHNOLOGY, LITERACY AND CULTURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Connections between technology, literacy, and culture. Includes instruction in advanced computer applications. Computer competency test or consent of instructor.

ENGL 4180 RHETORICAL THEORY AND PRACTICE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Advanced study in different topics in rhetorical theory and practice.

ENGL 4200 FICTION WRITING I (3) LEC. 3. Pr., ENGL 2000. Introduction to the craft of fiction writing; reading, studying, and writing short stories.

ENGL 4210 FICTION WRITING II (3) LEC. 3. Pr., ENGL 4200. Advanced fiction writing.

ENGL 4220 POETRY WRITING I (3) LEC. 3. Pr., ENGL 2000. Introduction to the craft of poetry writing; reading, studying, and writing poems.

ENGL 4230 POETRY WRITING II (3) LEC. 3. Pr., ENGL 4220. Advanced poetry writing.

ENGL 4240 SPECIAL PROJECT IN CREATIVE WRITING (3) LEC. 3. Pr., ENGL 4210 or ENGL 4230. Capstone course in creative writing. Course may be repeated for a maximum of 6 credit hours.

ENGL 4300 MEDIEVAL LIT IN TRANSLATION (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. British and Continental medieval literature.

ENGL 4310 RENAISSANCE ENGLISH LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. English literature from 1485-1660. Course may be repeated for a maximum of 6 credit hours.

ENGL 4320 RESTORATION AND EIGHTEENTH-CENTURY LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. British literature, 1660-1800. Course may be repeated for a maximum of 6 credit hours.

ENGL 4330 AGE OF REVOLUTION IN BRITISH LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. British literature, 1770-1830.

ENGL 4340 NINETEENTH-CENTURY BRITISH LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. British literature, 1830-1910. Course may be repeated for a maximum of 6 credit hours.

ENGL 4350 TWENTIETH-CENTURY BRITISH LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. British literature, 1910-1980. Course may be repeated for a maximum of 6 credit hours.

ENGL 4360 CONTEMPORARY BRITISH LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. British literature from 1980 to the present. Course may be repeated for a maximum of 6 credit hours.

ENGL 4370 IRISH LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Periods, movements, or major figures of the literature of Ireland.

ENGL 4400 EARLY AMERICAN LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. American literature from its beginnings to 1800.

ENGL 4410 NINETEENTH-CENTURY AMERICAN LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. American literature 1800-1910. Course may be repeated for a maximum of 6 credit hours.

ENGL 4420 TWENTIETH-CENTURY AMERICAN LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. American literature 1910-1980. Course may be repeated for a maximum of 6 credit hours.

ENGL 4430 CONTEMPORARY AMERICAN LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. American literature since 1980. Course may be repeated for a maximum of 6 credit hours.

ENGL 4440 SOUTHERN LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Literature of the American South.

ENGL 4450 TOPICS IN AFRICAN AMERICAN LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Concentrated investigation of varying topics in African American literature and culture.

ENGL 4500 STUDIES IN POETRY (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A study in one or more kinds of poetry.

ENGL 4510 EIGHTEENTH-CENTURY NOVEL (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A study of novels written in the eighteenth century.

ENGL 4520 NINETEENTH-CENTURY NOVEL (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A study of novels produced in the nineteenth century.

ENGL 4530 TWENTIETH-CENTURY FICTION (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A study of fiction produced in the twentieth century.

ENGL 4540 STUDIES IN DRAMA (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A study in one or more periods or kinds of drama.

ENGL 4550 STUDIES IN FILM AND LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Examining the interconnections between film and literature.

ENGL 4560 STUDIES IN CRITICAL THEORY (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. An advanced study in one or more theoretical approaches to literature.

ENGL 4570 STUDIES IN COMPARATIVE LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Non-British and non-American literature written in English or studied in translation.

ENGL 4600 CHAUCER (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. The major works of Chaucer in Middle English.

ENGL 4610 SHAKESPEARE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Shakespeare's works, career, and culture. Course may be repeated for a maximum of 6 credit hours.

ENGL 4620 MILTON (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Milton's principal poems, especially "Paradise Lost," with some attention to his prose.

ENGL 4630 BRITISH AUTHOR(S) (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Study of the literary career of one or more British authors. Course may be repeated for a maximum of 6 credit hours.

ENGL 4640 AMERICAN AUTHOR(S) (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Study of the literary career of one or more American authors. Course may be repeated for a maximum of 6 credit hours.

ENGL 4700 TOPICS IN LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 and ENGL 2260. Concentrated investigation of varying topics in literature. Course may be repeated for a maximum of 6 credit hours.

ENGL 4710 TOPICS IN GENDER AND LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Examination of varying topics related to the intersection between literature and gender. Course may be repeated for a maximum of 6 credit hours.

ENGL 4720 TOPICS IN MINORITY VOICES IN LITERATURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Literature of one or more minority group(s). Course may be repeated for a maximum of 6 credit hours.

ENGL 4730 TOPICS IN POPULAR CULTURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. One or more topics in popular culture. Course may be repeated for a maximum of 6 credit hours.

ENGL 4740 ENVIRONMENT, LITERATURE, AND CULTURE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2210 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. How literature and culture respond to the environment.

ENGL 4750 TOPICS IN MYTHOLOGY AND FOLKLORE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. A study in one or more topics of mythology or folklore. Course may be repeated for a maximum of 6 credit hours.

ENGL 4800 SEMINAR IN LITERATURE (3) LEC. 3. Pr., ENGL 3130. Research seminar in literature. Senior standing.

ENGL 4810 CAPSTONE IN PROFESSIONAL WRITING (3) LEC. 3. Pr., ENGL 2010. An advanced course in developing complex professional writing projects.

ENGL 4920 INTERNSHIP IN ENGLISH STUDIES (3) AAB/IND. SU. Pr., ENGL 1120 or ENGL 1127. Supervised experience in applying reading, writing and research skills to the workplace. Departmental approval.

ENGL 4960 SPECIAL PROBLEMS IN ENGLISH (3) IND. 3. Pr., 3.00 GPA. A least 5 courses in ENGL 4000-4999. Junior standing; 3.0 overall GPA; departmental approval. Readings in a specific area of literature or language. Course may be repeated for a maximum of 6 credit hours.

ENGL 4967 HONORS SPECIAL PROBLEMS IN ENGLISH (3) IND. 3. Pr., Honors College. ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Individual reading programs determined by the instructor and student.

ENGL 4997 HONORS THESIS (3) AAB/IND. Pr., Honors College. ENGL 1120 or ENGL 1127. Course may be repeated for a maximum of 6 credit hours.

ENGL 5000 TECHNICAL AND PROFESSIONAL EDITING (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127 and ENGL 2010. A technical writing, business writing, or advanced composition course or departmental approval.

ENGL 5010 DOCUMENT DESIGN IN TECHNICAL AND PROFESSIONAL COMMUNICATION (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127 and ENGL 2010. A technical writing, business writing, or advanced composition course or departmental approval.

ENGL 5030 TOPICS IN TECHNICAL AND PROFESSIONAL COMMUNICATION (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127 and ENGL 2010. A technical writing, business writing, or advanced composition course or departmental approval.

ENGL 5410 HISTORY OF THE ENGLISH LANGUAGE (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. The chronological development of the English language.

ENGL 5840 APPROACHES TO ENGLISH GRAMMAR (3) LEC. 3. Pr., ENGL 2000 or ENGL 2010 or ENGL 2230 or ENGL 2240 or ENGL 2250 or ENGL 2260. Examination of several grammatical theories, with emphasis on English syntax. Junior standing.

ENGL 6000 TECHNICAL AND PROFESSIONAL EDITING (3) LEC. 3.

ENGL 6010 DOCUMENT DESIGN IN TECHNICAL AND PROFESSIONAL COMMUNICATION (3) LEC. 3.

ENGL 6030 TOPICS IN TECHNICAL AND PROFESSIONAL COMMUNICATION (3) LEC. 3. Course may be repeated for a maximum of 6 credit hours.

ENGL 6410 HISTORY OF THE ENGLISH LANGUAGE (3) LEC. 3. The chronological development of the English language.

ENGL 6840 APPROACHES TO ENGLISH GRAMMAR (3) LEC. 3. Examination of several grammatical theories, with emphasis on English syntax.

ENGL 6910 PRACTICUM IN TECHNICAL AND PROFESSIONAL COMMUNICATION (3) PRA. 3. Supervised experience in editing technical, business, and scientific documents. Departmental approval.

ENGL 7010 TECHNICAL AND PROFESSIONAL COMMUNICATION: ISSUES AND APPROACHES (3) LEC. 3. Introduction to the history, practice, and profession of technical and professional communication.

ENGL 7020 THE PEDAGOGY OF TECHNICAL AND PROFESSIONAL COMMUNICATION (3) LEC. 3. Methods, practices, and theories of technical and professional communication for prospective teachers.

ENGL 7030 STUDIES IN TECHNICAL AND PROFESSIONAL COMMUNICATION (3) LEC. 3. Extensive study of selected types of research and writing for special purposes and novel situations. Course may be repeated for a maximum of 6 credit hours.

ENGL 7040 ENGLISH COMPOSITION: ISSUES AND APPROACHES (3) LEC. 3. Theory, research, and practice in English composition.

ENGL 7050 STUDIES IN COMPOSITION (3) LEC. 3. The advanced study of an approach or an issue in composition studies. Course may be repeated for a maximum of 9 credit hours.

ENGL 7060 WEB DEVELOPMENT (3) LEC. 3. Research-based best practices in web development.

ENGL 7070 GRANT AND PROPOSAL WRITING (3) LEC. 3. Research-based best practices in grant and proposal writing.

ENGL 7130 FICTION WRITING (3) LEC. 3. Workshop in the craft and writing of fiction. Course may be repeated for a maximum of 6 credit hours.

ENGL 7140 POETRY WRITING (3) LEC. 3. Workshop in the craft and writing of poetry. Course may be repeated for a maximum of 6 credit hours.

ENGL 7150 STUDIES IN MEDIEVAL LITERATURE (3) LEC. 3. Major works and genres in Middle English and related literary traditions. Course may be repeated for a maximum of 9 credit hours.

ENGL 7160 EARLY MODERN STUDIES (3) LEC. 3. Major literary movements, authors, and/or genres. Course may be repeated for a maximum of 9 credit hours.

ENGL 7170 EIGHTEENTH-CENTURY STUDIES (3) LEC. 3. Major literary movements, authors, and/or genres. Course may be repeated for a maximum of 9 credit hours.

ENGL 7180 NINETEENTH-CENTURY STUDIES (3) LEC. 3. Major literary movements, authors, and/or genres. Course may be repeated for a maximum of 9 credit hours.

ENGL 7190 AMERICAN STUDIES (3) LEC. 3. Major literary movements, authors, and/or genres. Course may be repeated for a maximum of 9 credit hours.

ENGL 7200 LITERARY MODERNISMS (3) LEC. 3. Major literary movements, authors, and/or genres. Course may be repeated for a maximum of 9 credit hours.

ENGL 7210 CONTEMPORARY LITERATURE AND CULTURE (3) LEC. 3. Major literary movements, authors, and/or genres. Course may be repeated for a maximum of 9 credit hours.

ENGL 7280 STUDIES IN LINGUISTICS (3) LEC. 3. A topic or topics in English linguistics, e.g., historical syntax, dialectology, phonology. Course may be repeated for a maximum of 9 credit hours.

ENGL 7300 RHETORIC THEORY AND PRACTICE (3) LEC. 3. Issues and developments in rhetorical theory and analysis, with special attention to the rhetoric of written texts. Course may be repeated for a maximum of 9 credit hours.

ENGL 7770 AFRICAN AMERICAN LITERATURE (3) LEC. 3. Study of African American literature and literary theories of ethnicity and race. Course may be repeated for a maximum of 9 credit hours.

ENGL 7780 STUDIES IN RACE, GENDER, AND SEXUALITY (3) LEC. 3. Focused topics in literature and theory of ethnicity, sexuality, gender, race, class, or disability. Course may be repeated for a maximum of 9 credit hours.

ENGL 7790 LITERARY THEORY: ISSUES AND APPROACHES (3) LEC. 3. Overview of significant theoretical issues, approaches, and conversations in literary and cultural theory, historical and/or contemporary.

ENGL 7800 STUDIES IN LITERARY THEORY (3) LEC. 3. Close study of particular theoretical approaches to literary study (e.g., cultural studies, postmodernism, textual criticism, anthropological approaches, etc.) Course may be repeated for a maximum of 6 credit hours.

ENGL 7810 STUDIES IN COMPARATIVE LITERATURE (3) LEC. 3. Comparative study of authors, genres, or issues from two or more cultures or critical perspectives. Course may be repeated for a maximum of 9 credit hours.

ENGL 7830 MAJORS AUTHOR(S) (3) LEC. 3. One or more major authors or a single work by a major author. Course may be repeated for a maximum of 9 credit hours.

ENGL 7850 STUDIES IN GENRE (3) LEC. 3. Study of one or more genres across literary periods. Course may be repeated for a maximum of 9 credit hours.

ENGL 7870 SPECIAL TOPICS IN ENGLISH STUDIES (3) LEC. 3. Special problems, topics, and materials in English studies not covered in other existing courses. Course may be repeated for a maximum of 9 credit hours.

ENGL 7910 PRACTICUM IN TECHNICAL AND PROFESSIONAL COMMUNICATION (3) PRA. 3. Supervised client-based experience in tasks commonly performed by technical communicators analyzed through current research in technical communication. Departmental approval.

ENGL 7930 DIRECTED INDIVIDUAL STUDY (1-3) IND. Available on a limited basis for qualified students; requires advance permission of the department graduate committee. Credits are to be arranged. Course may be repeated for a maximum of 6 credit hours.

ENGL 7990 RESEARCH AND THESIS (1-10) MST. Course may be repeated for a maximum of 20 credit hours.

ENGL 8990 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated for a maximum of 20 credit hours.

English for Spkr's Other Lang - CTES

Courses

CTES 5410 LANGUAGE MINORITY STUDENTS K-12 (3) LEC. 3. Non-major course to prepare elementary and secondary teachers to work effectively with English language learners (ELLs). Topics include instructional models for teaching ELLs. May count either CTES 5410 or CTES 6410.

CTES 6410 LANGUAGE MINORITY STUDENTS K-12 (3) LEC. 3. Non-major course to prepare elementary and secondary teachers to work effectively with English language learners (ELLs). Topics include instructional models for teaching ELLs. May count either CTES 5410 or CTES 6410.

CTES 7400/7406 TECHNOLOGY AND MEDIA IN ENGLISH FOR SPEAKERS OF OTHER LANGUAGES EDUCATION (ESOL) (3) LEC. 3. Application of instructional technology in second language instruction, authentic materials in the ESL classroom. May count either CTES 7400 or CTES 7406.

CTES 7420/7426 APPLIED LINGUISTICS IN SECOND LANGUAGE ACQUISITION (3) LEC. 3. Provides basic knowledge of phonetics, morphology, syntax, semantics, pragmatics, psycholinguistics, sociolinguistics and language variation to teach English language learners. May count either CTES 7420 or CTES 7426.

CTES 7460/7466 TEACHING ENGLISH TO SPEAKERS OF OTHER LANGUAGES IN P-12 (3) LEC. 3. Teaching practices and curriculum selection in P-12 ESOL. May count either CTES 7460 or CTES 7466.

CTES 7470/7476 ISSUES IN ENGLISH FOR SPEAKERS OF OTHER LANGUAGES EDUCATION (ESOL) (3) LEC. 3. Examination of central issues in the teaching and learning of ESOL including language policy, language diversity and multiculturalism. May count either CTES 7470 or CTES 7476.

CTES 7480/7486 ASSESSMENT IN ENGLISH FOR SPEAKERS OF OTHER LANGUAGES (ESOL) (3) LEC. 3. Theoretical perspectives on assessment of English Language Learners. Developing, administering and analyzing assessment instruments. May count either CTES 7480 or CTES 7486.

CTES 7920 INTERNSHIP (3-9) AAB/INT. SU. Supervised teaching in a K-12 public school accompanied by scheduled discussions to analyze and evaluate the intern's experience.

Entomology - ENTM

Courses

ENTM 2000 PESTS, PATHOGENS, PARASITES, AND PEOPLE (3) LEC. 3. Past and present problems of pests and disease involving humans and the food chain.

ENTM 2040/2043/2044 INSECTS: AN INTRODUCTION TO ENTOMOLOGY (3) LEC. 3. Life processes, importance, and occurrence of insects.

ENTM 2150 FOREST PESTS (4) LEC. 3. LAB. 2. Pr., BIOL 1020 or BIOL 1027. Insect and disease pests of forests. Recognition, biology, and fundamentals of management of important pest species.

ENTM 3040 GENERAL ENTOMOLOGY (4) LEC. 3. LAB. 2. Pr., BIOL 1030 or BIOL 1037. Introduction to the biology and diversity of insects. An insect collection is required.

ENTM 4020 ECONOMIC ENTOMOLOGY (4) LEC. 3. LAB. 2. Pr., BIOL 1030 or BIOL 1037. Consideration of the biological aspects, life histories and control of insects.

ENTM 4040 INSECTS AFFECTING HUMANS, DOMESTIC ANIMALS AND WILDLIFE (3) LEC. 3. Pr., (BIOL 1030 or BIOL 1037) or ENTM 3040. Insects and other arthropods which attack animals or otherwise cause problems of public-health, veterinary, or wildlife importance.

ENTM 4150 INTEGRATED FOREST PEST MANAGEMENT (3) LEC. 2. LAB. 3. Pr., ENTM 2150 and FORY 3100. Identification, principles of integrated management, and computer modeling of insects and fungi that attack forest and shade trees.

ENTM 4920 ENTOMOLOGY INTERNSHIP (5) INT. 5. SU. Practical professional experience under the supervision of internship faculty and/or representatives of state, federal or private agency.

ENTM 4960 SPECIAL PROBLEMS IN ENTOMOLOGY (1-3) IND. Credit to be arranged. Specialized project or research on a specific topic in entomology to be conducted under faculty supervision. Course may be repeated for a maximum of 3 credit hours.

ENTM 4980 UNDERGRADUATE RESEARCH (2-4) IND. Directed research in the area of specialty within the department. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

ENTM 4997 HONORS THESIS (1-6) IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ENTM 5010 ENTOMOLOGY FOR EDUCATORS (4) LEC. 4. LAB. 3. Pr., BIOL 1030 or BIOL 1037. Biology and diversity of insects and related arthropods with applications for educators. An insect collection and an entomological exposition are required.

ENTM 5030 INSECTICIDES IN THE ENVIRONMENT (4) LEC. 3. LAB. 2. Pr., CHEM 1030 and CHEM 1031 and CHEM 1040 and CHEM 1041. Toxic action and environmental fate of insecticides, regulations, formulations, application methods, insecticide resistance and research methods.

ENTM 5140 AQUATIC INSECTS (4) LEC. 3. LAB. 3. Pr., ENTM 3040 or BIOL 4010. Biology and ecology of aquatic and semi-aquatic insects. Laboratory sessions focus on identification at the family and generic levels, and experience in collecting and field techniques.

ENTM 5150 ARACHNOLOGY (4) LEC. 3. LAB. 3. Pr., ENTM 3040. Biology, behavior and systematics of all arachnid groups, with major emphasis on spiders and mites.

ENTM 5220 INSECT ECOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 3060. Ecological interactions of insects and their environment, with emphasis on herbivory, predation, parasitism and mutualism, as well as population and community dynamics.

ENTM 5300 SYSTEMATIC ENTOMOLOGY (4) LEC. 3. LAB. 4. Pr., ENTM 3040 or ENTM 4020. Learn to use the tools of the taxonomist to identify common families of insects. A collection is required. Field trips will be taken. Departmental approval.

ENTM 5330 INTEGRATED PEST MANAGEMENT (4) LEC. 3. LAB. 2. Pr., ENTM 3040 or ENTM 4020. Integrated management of insects by environmental, biological, genetic, chemical and legal means.

ENTM 5340 URBAN FOREST INSECTS (3) LEC. 2. LAB. 3. Pr., ENTM 2150 and (ENTM 3040 or ENTM 4020). Identification, importance, biology and management of principal insects of the urban forest.

ENTM 5360/5363 LANDSCAPE ENTOMOLOGY (4) LEC. 3. LAB. 3. Pr., (BIOL 1020 or BIOL 1027) or (BIOL 1030 or BIOL 1037). Identification and management of arthropod pests in the landscape. Recognition of pests and damage to trees, turf and ornamental plants.

ENTM 5370 URBAN ENTOMOLOGY (4) LEC. 3. LAB. 3. Pr., ENTM 3040 or ENTM 4020. Identification, biology and control of insect and other household arthropod pests.

ENTM 5440 INSECT MORPHOLOGY (4) LEC. 3. LAB. 4. Pr., ENTM 3040 and ENTM 4020. Form and function in insects and related arthropods emphasizing morphological characteristics used in insect identification. Departmental approval.

ENTM 5920 INTERNSHIP (3) IND. 3. SU. Practical professional experience under the supervision of internship faculty and a representative of a state, federal, or private agency. Departmental approval.

ENTM 6010 ENTOMOLOGY FOR EDUCATORS (4) LEC. 4. LAB. 3. Pr., BIOL 1030 or BIOL 1037. Biology and diversity of insects and related arthropods with applications for educators. An insect collection and an entomological exposition are required.

ENTM 6030 INSECTICIDES IN THE ENVIRONMENT (4) LEC. 3. LAB. 2. Pr., CHEM 1030 and CHEM 1031 and CHEM 1040 and CHEM 1041. Toxic action and environmental fate of insecticides, regulations, formulations, application methods, insecticide resistance and research methods.

ENTM 6140 AQUATIC INSECTS (4) LEC. 3. LAB. 3. Pr., ENTM 3040 or BIOL 4010. Biology and ecology of aquatic and semi-aquatic insects. Laboratory sessions focus on identification at the family and generic levels, and experience in collecting and field techniques. Departmental approval.

ENTM 6150 ARACHNOLOGY (4) LEC. 3. LAB. 3. Pr., ENTM 3040. Biology, behavior and systematics of all arachnid groups, with major emphasis on spiders and mites. Departmental approval.

ENTM 6220 INSECT ECOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 3060. Ecological interactions of insects and their environment, with emphasis on herbivory, predation, parasitism and mutualism, as well as population and community dynamics. Departmental approval.

ENTM 6300 SYSTEMATIC ENTOMOLOGY (5) LEC. 3. LAB. 6. Pr., ENTM 3040 or ENTM 4020. Principles of systematics and identification of insects through orders, families, genera, and species. Collections are required. Credit will not be given for both ENTM 4300 and ENTM 7300. Departmental approval.

ENTM 6330 INTEGRATED PEST MANAGEMENT (4) LEC. 3. LAB. 2. Pr., ENTM 3040 or ENTM 4020. Integrated management of insects by environmental, biological, genetic, chemical and legal means.

ENTM 6340 URBAN FOREST INSECTS (3) LEC. 2. LAB. 3. Pr., ENTM 2150 and (ENTM 3040 or ENTM 4020). Identification, importance, biology and management of principal insects of the urban forest.

ENTM 6360/6366 LANDSCAPE ENTOMOLOGY (4) LEC. 3. LAB. 3. Pr., (BIOL 1020 or BIOL 1027) or (BIOL 1030 or BIOL 1037). Identification and management of arthropod pests in the landscape. Recognition of pests and damage to trees, turf and ornamental plants.

ENTM 6370 URBAN ENTOMOLOGY (4) LEC. 3. LAB. 3. Pr., ENTM 3040 or ENTM 4020. Identification, biology and control of insect and other household arthropod pests.

ENTM 6440 INSECT MORPHOLOGY (5) LEC. 3. LAB. 6. Pr., ENTM 3040 or ENTM 4020. Comparative external anatomy and generalized internal structures of insects. Characteristics used in taxonomy will be emphasized. Credit will not be given for both ENTM 5440 and ENTM 6440. Departmental approval.

ENTM 6920 INTERNSHIP (3) IND. 3. SU. Practical professional experience under the supervision of internship faculty and a representative of a state, federal, or private agency. Departmental approval.

ENTM 7100 GENERAL TOXICOLOGY (4) LEC. 3. LAB. 3. Pr., ENTM 3040 and CHEM 2030. History, mechanism of action, metabolism, and structure activity relationship of natural and synthetic insecticides. Contemporary laboratory techniques in toxicology will be featured. Departmental approval.

ENTM 7130 BIOLOGICAL AND MICROBIAL CONTROL OF INSECTS (4) LEC. 3. LAB. 3. Pr., (ENTM 3040 or ENTM 4020) and BIOL 3200. Biology, ecology, classification and use of insect natural enemies. Departmental approval.

ENTM 7190 PLANT AND ANIMAL INTERACTIONS (3) LEC. 3. Pr., BIOL 3060. Ecological and evolutionary interrelationships emphasizing pollination biology, seed dispersal and plant-herbivore interactions. Departmental approval.

ENTM 7200 INSECT PHYSIOLOGY (4) LEC. 3. LAB. 3. Pr., ENTM 3040. Introduction to insect physiology stressing structure and function of each organ system. Methods used in physiological research will be emphasized. Departmental approval.

ENTM 7330 MEDICAL-VETERINARY ENTOMOLOGY (4) LEC. 3. LAB. 3. Pr., ENTM 3040 or BIOL 6110. Insects, mites, and other arthropods of medical or veterinary importance, identification of species, their biology and role as vectors of disease agents. Departmental approval.

ENTM 7345 TROPICAL BIOLOGY: AN ECOLOGICAL APPROACH (8) LEC. 4. LAB. 12. Pr., At least 15 credits in BIOL 7000-7999. The principles of ecology in the tropics. Departmental approval.

ENTM 7900 DIRECTED STUDIES IN ENTOMOLOGY I (1-5) LEC. SU. Discussion groups on specific topics, assigned readings, on laboratory problems or field research. Course may be repeated for a maximum of 5 credit hours.

ENTM 7910 TEACHING PRACTICUM (1) LAB. 2. SU. The teaching practicum will address the practical and heretical issues of laboratory learning and facilitating the skills of pedagogy. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

ENTM 7930 JOURNAL REVIEW FOR ENTOMOLOGY AND PLANT PATHOLOGY (1) LEC. 1. Pr., ENTM 3040 and ENTM 4020 or PLPA 3000. Discussion of recent scientific publications on basic aspects of research in entomology and plant pathology. Course may be repeated for a maximum of 2 credit hours.

ENTM 7950 SEMINAR (1) SEM. 1. SU. Presentation and discussion of scientific literature of thesis research findings. Required of all M.S. candidates.

ENTM 7960 ADVANCED SPECIAL PROBLEMS IN ENTOMOLOGY I (1-5) IND. Departmental approval. Specialized project or research on a specific topic in entomology to be conducted under faculty supervision. Course may be repeated for a maximum of 5 credit hours.

ENTM 7990 RESEARCH AND THESIS (1-10) MST. Topics may focus on technical laboratory problems or field research related to arthropod biology. Admission to the M.S. Program. Course may be repeated with change in topics.

ENTM 8900 DIRECTED STUDIES IN ENTOMOLOGY II (1-5) LEC. SU. Discussion groups on specific topics, assigned reading on laboratory problems or field research. Course may be repeated for a maximum of 5 credit hours.

ENTM 8910 TEACHING PRACTICUM (1-3) LAB. 2. SU. Departmental approval. Practical and theoretical issues of laboratory learning, and pedagogical facilitation. Required of all PhD students. Course may be repeated for a maximum of 3 credit hours.

ENTM 8930 JOURNAL REVIEW FOR ENTOMOLOGY AND PLANT PATHOLOGY (1) LEC. 1. Pr., ENTM 3040 and ENTM 4020 or PLPA 3000. Discussion of recent scientific publications on basic aspects of research in entomology and plant pathology. Course may be repeated for a maximum of 3 credit hours.

ENTM 8950 SEMINAR (1) LEC. 1. SU. Presentation and discussion of scientific literature or dissertation research findings. Required of all Ph.D. students.

ENTM 8960 ADVANCED SPECIAL PROBLEMS IN ENTOMOLOGY II (1-5) IND. Departmental approval. Credit to be arranged. Specialized project or research on a specific topic in entomology to be conducted under faculty supervision. Course may be repeated for a maximum of 5 credit hours.

ENTM 8990 RESEARCH AND DISSERTATION (1-10) DSR. Admission to the Ph.D. Program. Course may be repeated with change in topics.

EntreprenFamily Business - ENFB

Courses

ENFB 4140 ESSENTIALS OF ENTREPRENEURSHIP (3) LEC. 3. Pr., P/C, MNGT 3100 and P/C, MKTG 3310 and P/C, FINC 3610 and ECON 2030. The application of basic business principles to the entrepreneurial environment.

ENFB 4160 FAMILY BUSINESS MANAGEMENT (3) LEC. 3. Pr., MNGT 3100 or MNGT 3107. Coreq., MNGT 4140 and ENFB 4140. Study of aspects of managing an established family business, on a day-to-day basis, and of planning for succession to the next generation.

ENFB 4170 MANAGING ENTREPRENEURIAL START-UPS (3) LEC. 3. Pr., ENFB 4140. Study of aspects of managing and marketing concepts and processes that can be utilized to launch new ventures or a new division within an existing business.

ENFB 4180 GROWTH STRATEGIES FOR EMERGING COMPANIES (3) LEC. 3. Pr., ENFB 4140. Study of the important aspects of starting and managing a franchise business.

ENFB 4190 NEW VENTURE CREATION (3) LEC. 3. Pr., ENFB 4140. Analysis of industrial, competitive, market and financial aspects of starting a business.

ENFB 4200 BUSINESS PLAN FOR THE NEW VENTURE (3) LEC. 3. Pr., MNGT 4140 or ENFB 4140. Application of entire business education and experience to a practical, hands-on project.

ENFB 4210 CORPORATE VENTURING-ENTREPRENEURS IN ORGANIZATIONS (3) LEC. 3. Pr., (MNGT 4140 or ENFB 4140) and (MNGT 4190 or ENFB 4190). Study of the entrepreneurial process as it applies to the operations of a department or functional area within an established organization.

ENFB 4920 INTERNSHIP (1-6) INT. SU. Pr., 2.50 GPA. Approval by departmental intern program committee. Course may be repeated for a maximum of 6 credit hours.

ENFB 4950 SEMINAR IN ENTREPRENEURSHIP AND FAMILY BUSINESS (1-10) SEM. Course may be repeated for a maximum of 10 credit hours.

ENFB 5900 DIRECTED STUDIES (1-3) IND. SU. Independent study on current topics in management. Course may be repeated for a maximum of 6 credit hours.

ENFB 5960 SPECIAL PROBLEMS (1-3) IND. Independent study investigating current literature in management. Course may be repeated for a maximum of 6 credit hours.

ENFB 6900/6906 DIRECTED STUDIES (1-3) IND. SU. Independent study on current topics in management. Course may be repeated for a maximum of 3 credit hours.

ENFB 6960/6966 SPECIAL PROBLEMS (3) IND. General management theories, practices, and functions in industry and business. Individual work with a designated faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

Environmental Design - ENVD

Courses

ENVD 2000 ENVIRONMENTAL DESIGN CONCEPTS AND PRACTICES I (3) LEC. 3. Pr., ARCH 1000 or INDD 1120 or BSCI 1100.Or ENVD major. Core knowledge of design and construction disciplines and business practices related to human-designed environments. Includes national and global perspectives and focus on interdisciplinary studies.

ENVD 2100 ENVIRONMENTAL DESIGN WORKSHOP I (6) LAB/LEC. 6. Pr., ENVD 2000.Focus on general technical skill set for environmental design foundations. Digital media introduction, structure and fabrication techniques, design communication development. Departmental approval.

ENVD 2200 READINGS IN LANDSCAPE ARCHITECTURE (3) SEM. 3. Investigates the idea of landscape through a range of texts, images, and built works that have helped form, and continue to shape, our understanding of the landscape. First year of B.ENVD.

ENVD 3000 ENVIRONMENTAL DESIGN CONCEPTS AND PRACTICES II (3) LEC. 3. Pr., ENVD 2100.Advanced knowledge of design, construction and planning disciplines and practice. National/global environmental design issues, focus on interdisciplinary concepts, hybrid practices, & sustainability. Departmental approval.

ENVD 3100 CIVIC ENGAGEMENT AND RESEARCH METHODS (3) LEC. 3. Pr., ENVD 3000.Civic engagement and research methods for environmental design. This is a research prep course to develop research methods, projects, and community partnerships for summer ENVD 4100 workshop capstone. Departmental approval.

ENVD 4010 ELEMENTS OF DESIGN THINKING AND COMMUNICATION (3) LEC. 3. This is a 3-credit hour class that builds design communication skills through a series of projects that utilize both hand-rendering and digital media.

ENVD 4100 ENVIRONMENTAL DESIGN WORKSHOP II - CAPSTONE (6) LAB/LEC. 6. Pr., ENVD 3100.Environmental design knowledge & technical skill set using principles of collaboration, leadership & effectiveness training, hands-on experience, civic engagement & design communication skills.

ENVD 4970 SPECIAL TOPICS IN ENVIRONMENTAL DESIGN (3) LEC. 3. Topics include: digital production, portfolio making and design thinking.

Environmental Science - ENVI

Courses

ENVI 1010 INTRODUCTION TO ENVIRONMENTAL SCIENCE (0) LEC. 1. SU. Introduction to the environmental science field and the ENVI major.

ENVI 1020 FUNDAMENTALS OF ENVIRONMENTAL SCIENCE (2) LEC. 2. Preference given to students for whom the course is required. Survey of fundamental concepts, issues, and concerns related to environmental science.

ENVI 2010 ENVIRONMENTAL SCIENCE SEMINAR (1) LEC. 1. Pr., ENGL 1120.ENGL 1120 and departmental approval. Discussion of current issues in environmental science.

ENVI 4980 UNDERGRADUATE RESEARCH (2-4) IND. Directed research in the area of specialty within the department. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

Finance - FINC

Courses

FINC 2400 PERSONAL FINANCE (3) LEC. 3. Plans for managing personal financing problems involving insurance, housing, household budgeting, investments, personal and bank loans, personal credit and time value of money.

FINC 3100 FUNDAMENTALS OF GLOBAL TRADE (3) LEC. 3. COB academic standards. Export management skills, including basic global supply chain management and trade finance. Junior standing.

FINC 3200 RISK AND INSURANCE (3) LEC. 3. Essentials of risk management, with emphasis on the use of insurance, including the characteristics of property, liability, life and health insurance. Junior standing.

FINC 3250 PRINCIPLES OF REAL ESTATE (3) LEC. 3. Fundamental principles and practices as applied to the purchase, sale and lease and management of real estate. Junior standing.

FINC 3610 PRINCIPLES OF BUSINESS FINANCE (3) LEC. 3. Pr., ACCT 2110 or ACCT 2117 or ACCT 2810 or ACCT 3110. Corporate finance from the perspective of a financial manager. Topics include time value of money, valuation, and capital budgeting.

FINC 3617 HONORS PRINCIPLES OF BUSINESS FINANCE (3) LEC. 3. Pr., Honors College. ACCT 2117. Corporate finance from the perspective of a financial manager. Topics include financial planning and forecasting cash budgeting, capital budgeting, basic valuation, dividends. Fall, Spring. Junior standing.

FINC 3620 SMALL BUSINESS FINANCE (3) LEC. 3. Pr., FINC 3610 or FINC 3617. Financial control, financial forecasting, working capital and sources of financing in a small and closely-held business environment.

FINC 3630 ADVANCED BUSINESS FINANCE (3) LEC. 3. Pr., (FINC 3610 or FINC 3617) and (STAT 2610 or MNGT 2600). In-depth analysis of financial concepts including valuation capital budgeting, cost of capital, leasing, financial analysis, and working capital structure.

FINC 3640 INVESTMENTS (3) LEC. 3. Pr., FINC 3610 or FINC 3617. Types of investment security markets, investment instruments, concepts and strategies for institutional and individual investors.

FINC 3700 FINANCIAL MARKETS INSTITUTIONS (3) LEC. 3. Pr., FINC 3610 or FINC 3617. Overview of the financial system, organization and regulation of financial markets and institutions, the behavior and structure of interest rates.

FINC 3810 FOUNDATIONS OF BUSINESS FINANCE (3) LEC. 3. Pr., ACCT 2810 or ACCT 2110 or ACCT 2117. Foundations of Business Finance is a broad based introductory course that will focus on finance functions and applications of finance principles. This course is not open to undergraduates majoring in business. Junior standing.

FINC 4210 PROPERTY AND LIABILITY INSURANCE (3) LEC. 3. Pr., FINC 3200. Commercial risks and the insurance contracts used to address these risks.

FINC 4220 LIFE INSURANCE (3) LEC. 3. Pr., FINC 3200. Individual life, health, annuity contracts and other investments, with a focus on financial planning, estate planning, and business continuation arrangements. Departmental approval.

FINC 4250 REAL ESTATE INVESTMENT (3) LEC. 3. Pr., (FINC 3610 or FINC 3617) and FINC 3250. Analysis and evaluation of real estate investments including cash flow measurement for both residential and commercial investment projects.

FINC 4520 INTERNATIONAL FINANCIAL MARKETS (3) LEC. 3. Pr., FINC 5510. Analysis of multinational financial markets, their use by the multinational corporation in managing currency risk, as a source of funds, and for portfolio investment. Departmental approval;

FINC 4630 FINANCIAL STRATEGY (3) LEC. 3. Pr., ACCT 3110 and FINC 3630. The advanced application of corporate finance through case analysis, company analysis, and current topics.

FINC 4650 FINANCIAL STATEMENT ANALYSIS (3) LEC. 3. Pr., FINC 3610 or FINC 3617. Evaluation and assessment of financial condition, performance, and reporting strategies of firms using relevant financial and market information.

FINC 4660 SECURITY ANALYSIS (3) LEC. 3. Pr., ACCT 3110 and FINC 3630 and FINC 3640. Analysis, techniques and selection of securities to meet specific investment objectives. Focus on individual security analysis and portfolio management.

FINC 4700 MANAGEMENT OF FINANCIAL INSTITUTIONS (3) LEC. 3. Pr., FINC 3700. Management strategies for firms including management of credit, liquidity, capital and interest rate risks in a regulated environment.

FINC 4900 DIRECTED STUDIES (1-3) IND. SU. Advanced individual research and study in finance under the direction of a faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FINC 4920 INTERNSHIP (1-6) AAB/INT. SU. The internship program offers the opportunity to gain relevant and meaningful work experience. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FINC 4970 SPECIAL TOPICS (1-3) AAB. Specialized topics and current developments and innovations in finance. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FINC 4997 HONORS THESIS (1-6) IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FINC 5510 MULTINATIONAL FINANCIAL MANAGEMENT (3) LEC. 3. Pr., FINC 3610 or FINC 3617. Advantages and problems associated with the modern multinational corporation, including analysis of currency risk, hedging, and political risk.

FINC 5680 FINANCIAL ENGINEERING (3) LEC. 3. Pr., FINC 3630 or FINC 3640 or FINC 3700. Examination of derivative securities with emphasis on applying derivative securities to the management of corporate financial risk.

FINC 5740 ADVANCED FINANCIAL ANALYSIS (3) LEC. 3. Pr., FINC 3630 and P/C, FINC 3640 and P/C, ACCT 3110. Issues surrounding and methods for financial analysis of investments/firms, including: ethics, qualitative methods, economics, financial reporting/analysis, and portfolio management. May count FINC 5740 or 6740. Departmental approval.

FINC 6510/6516 MULTINATIONAL FINANCIAL MANAGEMENT (3) LEC. 3. Advantages and problems associated with the modern multinational corporation, including analysis of currency risk, hedging, and political risk.

FINC 6680/6686 FINANCIAL ENGINEERING (3) LEC. 3. Pr., FINC 7600 or BUSI 7110. Theory and pricing of derivative securities with emphasis on applying derivative securities in corporate financial risk management. Departmental approval.

FINC 6740 ADVANCED FINANCIAL ANALYSIS (3) LEC. 3. Pr., (BUSI 7110 or BUSI 7116). Issues surrounding and methods for financial analysis of investments/firms, including: ethics, qualitative methods, economics, financial reporting/analysis, and portfolio management. May count FINC 5740 or 6740. Departmental approval.

FINC 7410/7416 BUSINESS RISK MANAGEMENT (3) LEC. 3. An analysis of business risk and the risk management methods, including loss control, insurance, and other forms of risk financing, used to handle these risks. Departmental approval.

FINC 7600/7606 ADVANCED CORPORATE FINANCE (3) LEC. 3. Pr., FINC 3610 or FINC 3617. Intensive study of theory and problems in corporate finance from an internal decision making point of view. Departmental approval.

FINC 7620/7626 ADVANCED REAL ESTATE FINANCE (3) LEC. 3. Pr., (FINC 7600 or FINC 7606) or BUSI 7110. Study of real estate markets including regulatory and legal issues, valuation of income producing property, financing sources, corporate real estate, investment performance measurement. Departmental approval.

FINC 7630/7636 HEALTH CARE FINANCE (3) LEC. 3. Pr., (FINC 7600 or FINC 7606) or BUSI 7110. Techniques and analysis of financial management in a health care setting. Emphasis on financial planning and forecasting, budgeting, capital investment analysis in the regulated healthcare marketplace. Departmental approval.

FINC 7640/7646 ADVANCED INVESTMENTS (3) LEC. 3. Pr., (FINC 7600 or FINC 7606) or BUSI 7110. Types of investment securities, regulation and operation of securities markets and the theory and practice of investments. Departmental approval.

FINC 7650/7656 APPLIED FINANCIAL MANAGEMENT (3) LEC. 3. Pr., (FINC 7600 or FINC 7606) or BUSI 7110. The integration of financial theory with practice through spreadsheets, case analysis, company analysis, and current topics in finance. Departmental approval.

FINC 7660/7666 SECURITY ANALYSIS AND MANAGEMENT (3) LEC. 3. Pr., (FINC 7600 or FINC 7606) or BUSI 7110. Advanced analytical methods for security valuation, managing investment portfolios, and developing appropriate investment strategies. Departmental approval.

FINC 7670/7676 MERGERS, ACQUISITIONS AND RESTRUCTURING (3) LEC. 3. Pr., FINC 7600 or FINC 7606 or BUSI 7110. Strategic analysis of corporate restructuring and governance including valuation, control issues, joint ventures, divestitures, takeover defense measures, diversification issues. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FINC 7690/7696 ADVANCED FINANCIAL SYSTEMS (3) LEC. 3. Pr., (FINC 7600 or FINC 7606) or BUSI 7110. Analysis and examination of financial institutions and markets in an evolving regulatory and global marketplace for financial services and products. Departmental approval.

FINC 7900/7906 DIRECTED STUDIES (1-3) IND. SU. In-depth research and study under the direction of a faculty member. Topics are variable within finance and finance-related areas. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FINC 7970/7976 SPECIAL TOPICS (1-3) IND. Specialized topics in finance and finance-related areas not otherwise covered in existing courses. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FINC 7990 RESEARCH AND THESIS (1-10) MST. Departmental approval. Course may be repeated with change in topics.

Fisheries & Allied Aqua - FISH

Courses

FISH 1100 FISHERIES ORIENTATION (1) LEC. 1. SU. An introduction to the departmental programs and personnel and how to make the most of a future in fisheries.

FISH 2100 INTRODUCTION TO FISHERIES SCIENCES (3) LEC. 2. LAB. 3. Pr., (BIOL 1030 or BIOL 1037) and FISH 1100. Hands-on field activities and site visits related to aquatic ecology, fisheries biology, and aquaculture.

FISH 3800 CAREERS IN FISHERIES (1) LEC. 1. SU. Pr., FISH 2100. Consideration of various aspects of fisheries work, career options as related to individual interests, and career planning. Departmental approval.

FISH 3950 CAREERS IN FISHERIES (1) LEC. 1. SU. Pr., FISH 2100. Consideration of various aspects of fisheries work, career options as related to individual interests, and career planning or departmental approval. Fall.

FISH 4900 DIRECTED STUDIES IN FISHERIES (1-4) IND. SU. Individualized in depth study on a particular subject under the guidance of a professor. May include directed reading and research. Course may be repeated for a maximum of 4 credit hours.

FISH 4920 INTERNSHIP (1-5) INT. SU. Discipline-related learning while employed with cooperating private industry or public agency. Departmental approval. Course may be repeated for a maximum of 5 credit hours.

FISH 4960 SPECIAL PROBLEMS (1-4) LEC. Departmental approval. Individual and group problems investigations in fisheries and allied aquacultures. Course may be repeated for a maximum of 4 credit hours.

FISH 4967 HONORS SPECIAL PROBLEMS (1-4) IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

FISH 4980 UNDERGRADUATE RESEARCH (2-4) IND. Directed research in the area of specialty within the department. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

FISH 4997 HONORS THESIS (1-3) IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

FISH 5210 PRINCIPLES OF AQUACULTURE (3) LEC. 3. Pr., (BIOL 1030 or BIOL 1037) and FISH 2100. Principles underlying aquatic productivity and levels of management as demonstrated by present practices of aquaculture around the world.

FISH 5215 MARINE AQUACULTURE (2) LEC. 1. LAB. 2. Introduction to culture of marine species with emphasis in nutrition and feeding, reproductive biology, production techniques, processing, marketing and economics. Taught at the Dauphin Island Sea Lab. Summer. Departmental approval.

FISH 5220 WATER SCIENCE (3) LEC. 3. Pr., CHEM 1040 and FISH 2100. Properties of water, the water cycle, basic water chemistry and water quality with emphasis on water in managed ecosystems. Fall. Departmental approval.

FISH 5240 HATCHERY MANAGEMENT (4) LEC. 2. LAB. 8. Pr., FISH 5210 or FISH 6210. Study of warm-water hatchery techniques and application of those techniques in the field. Spring.

FISH 5250 AQUACULTURE PRODUCTION (4) LEC. 3. LAB. 4. Pr., FISH 5210. Factors affecting growth and yield of aquacultural species, with implications toward farming commonly cultured species. Production techniques for commercially important finfish are discussed. Summer.

FISH 5320 LIMNOLOGY (3) LEC. 3. Pr., CHEM 1040 and (BIOL 1030 or BIOL 1037) and BIOL 3060. Limnology is the study of the chemical, physical, geological, biological, and ecological processes that influence the structure and function of freshwater communities.

FISH 5321 LIMNOLOGY LABORATORY (1) LAB. 4. Pr., (BIOL 1030 or BIOL 1037) and CHEM 1040 and BIOL 3060 and (P/C, FISH 5320 or P/C, FISH 6320). Limnology is the study of the chemical, physical, geological, biological, and ecological processes that influence the structure and function of aquatic communities. May count either FISH 5321 or FISH 6321.

FISH 5380 GENERAL ICHTHYOLOGY (4) LEC. 3. LAB. 6. Pr., BIOL 1030 or BIOL 1037. Survey of the biodiversity of world and local fishes, with an overview of ecology, behavior, biology and conservation of fishes. Fall.

FISH 5410 INTRODUCTION TO FISH HEALTH (3) LEC. 3. Pr., BIOL 1030 or BIOL 1037. Introduction to parasitic, bacterial and viral pathogens of wild and cultured finfish and shellfish. Fall.

FISH 5425 MARINE FISH DISEASES (4) LEC. 7.5. LAB. 6. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3200. Introduction to diseases of marine finfish and shellfish and practical techniques used to isolate and identify diseases. Taught at Dauphin Island Sea Lab, Summer, First Term. Summer. Departmental approval.

FISH 5440 FISH ANATOMY AND PHYSIOLOGY (4) LEC. 3. LAB. 4. Pr., FISH 5380. Departmental approval. Gross and microscopic fish anatomy.

FISH 5510 FISHERIES BIOLOGY AND MANAGEMENT (4) LEC. 3. LAB. 4. Pr., (BIOL 1030 or BIOL 1037) and FISH 2100. This course provides a general overview and introduction to fisheries management with emphasis on freshwater examples. The laboratory will provide hands-on field experience. Credit will not be given for both FISH 5510 and FISH 6510.

FISH 5520 SMALL IMPOUNDMENT MANAGEMENT (3) LEC. 5. LAB. 10. Pr., (BIOL 1030 or BIOL 1037) and FISH 2100. Major aspects of primarily recreational fishing pond management, including construction, stocking, water quality management, harvest strategy, diagnosis of problems and communication of analyses. Summer.

FISH 5630 FACILITIES FOR AQUACULTURE (3) LEC. 2. LAB. 4. Pr., (BIOL 1030 or BIOL 1037) and CHEM 1040 and FISH 2100. Principles and practice of site selection, design and construction of aquacultural facilities, with emphasis on impoundments and ponds. Odd years. Spring.

FISH 5650 FISH AND SEAFOOD PROCESSING TECHNOLOGY (3) LEC. 3. Pr., CHEM 2030 and BIOL 3200. Emphasis on important species, market forms, preservation techniques, and rules and regulations of the seafood industry.

FISH 5670 FISHERIES AND AQUACULTURES EXTENSION METHODS (2) LEC. 2. Pr., (BIOL 1030 or BIOL 1037) and CHEM 1040 and FISH 2100. Concepts and practices pertaining to aquacultural extension organization, administration, program development and implementation. Summer.

FISH 5710 AQUATIC MICROBIOLOGY (3) LEC. 3. Pr., BIOL 1030 or BIOL 1037. Overview of the diversity, genetics, physiology, and ecology of aquatic microorganisms, with an emphasis on bacteria, archaea and viruses. Departmental approval.

FISH 5725 MARINE ICHTHYOLOGY (6) LEC. 6. Pr., BIOL 3060. General background in the biology of marine fishes and their taxonomy. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS. Summer. Departmental approval; Admission to the Gulf Coast Research Laboratory.

FISH 5735 PRINCIPLES OF MARINE AQUACULTURE (6) LEC. 6. Pr., At least 16 credits in BIOL 1000-8999. Principles and technologies for culture of commercially important marine organisms. Offered at the Gulf Coast Research Laboratory, Ocean Springs, MS. Summer. Acceptance at GCRL.

FISH 5745 MARINE FISHERIES MANAGEMENT (4) LEC. 4. Overview of practical marine fishery management problems. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS. Summer. Departmental approval; Admission to GCRL.

FISH 5970 TOPICS IN FISHERIES AND ALLIED AQUACULTURES (1-4) LEC. Instruction and discussion in a selected current topic in Fisheries, Aquaculture or Aquatic Sciences.

FISH 6210 PRINCIPLES OF AQUACULTURE (3) LEC. 3. Pr., BIOL 1030 or BIOL 1037. Principles underlying aquatic productivity and levels of management as demonstrated by present practices of aquaculture around the world. Fall.

FISH 6215 MARINE AQUACULTURE (2) LEC. 1. LAB. 2. Introduction to culture of marine species with emphasis in nutrition and feeding, reproductive biology, production techniques, processing, marketing and economics. Taught at the Dauphin Island Sea Lab. Summer. Departmental approval.

FISH 6220 WATER SCIENCE (3) LEC. 3. Pr., CHEM 1040. Properties of water, the water cycle, basic water chemistry and water quality with emphasis on water in managed ecosystems. Fall. Departmental approval.

FISH 6240 HATCHERY MANAGEMENT (4) LEC. 2. LAB. 8. Pr., FISH 6210. Study of warm-water hatchery techniques and application of those techniques in the field. Spring.

FISH 6250 AQUACULTURE PRODUCTION (4) LEC. 3. LAB. 4. Pr., BIOL 1030 or BIOL 1037. Factors affecting growth and yield of aquacultural species, with implications toward farming commonly cultured species. Production techniques for commercially important finfish are discussed. Summer.

FISH 6320 LIMNOLOGY (3) LEC. 3. Pr., CHEM 1040 and (BIOL 1030 or BIOL 1037) and BIOL 3060. Limnology is the study of the chemical, physical, geological, biological, and ecological processes that influence the structure and function of freshwater communities.

FISH 6321 LIMNOLOGY LABORATORY (1) LAB. 4. Pr., (BIOL 1030 or BIOL 1037) and CHEM 1040 and BIOL 3060 and (P/C, FISH 5320 or P/C, FISH 6320). Limnology is the study of the chemical, physical, geological, biological, and ecological processes that influence the structure and function of aquatic communities. May count either FISH 5321 or FISH 6321.

FISH 6380 GENERAL ICHTHYOLOGY (4) LEC. 3. LAB. 6. Pr., BIOL 1030 or BIOL 1037. Survey of the biodiversity of world and local fishes, with an overview of ecology, behavior, biology and conservation of fishes. Fall.

FISH 6410 INTRODUCTION TO FISH HEALTH (3) LEC. 3. Pr., BIOL 1030 or BIOL 1037. Introduction to parasitic, bacterial and viral pathogens of wild and cultured finfish and shellfish. Fall.

FISH 6425 MARINE FISH DISEASES (4) LEC. 7.5. LAB. 6. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3200. Introduction to diseases of marine finfish and shellfish and practical techniques used to isolate and identify diseases. Taught at Dauphin Island Sea Lab, Summer, First Term. Summer. Departmental approval.

FISH 6440 FISH ANATOMY AND PHYSIOLOGY (4) LEC. 3. LAB. 4. Pr., FISH 6380. Departmental approval. Gross and microscopic fish anatomy.

FISH 6510 FISHERIES BIOLOGY AND MANAGEMENT (4) LEC. 3. LAB. 4. Pr., BIOL 1030 or BIOL 1037. This course provides a general overview and introduction to fisheries management with emphasis on freshwater examples. The laboratory will provide hands-on field experience. Credit will not be given for both FISH 5510 and FISH 6510.

FISH 6520 SMALL IMPOUNDMENT MANAGEMENT (3) LEC. 5. LAB. 10. Pr., BIOL 1030 or BIOL 1037. Major aspects of primarily recreational fishing pond management, including construction, stocking, water quality management, harvest strategy, diagnosis of problems and communication of analyses. Summer.

FISH 6630 FACILITIES FOR AQUACULTURE (3) LEC. 2. LAB. 4. Principles and practice of site selection, design and construction of aquacultural facilities, with emphasis on impoundments and ponds. Odd years. Spring.

FISH 6650 FISH AND SEAFOOD PROCESSING TECHNOLOGY (3) LEC. 3. Pr., CHEM 2030 and BIOL 3200. Emphasis on important species, market forms, preservation techniques, and rules and regulations of the seafood industry. Summer.

FISH 6670 FISHERIES AND AQUACULTURE EXTENSION METHODS (2) LEC. 2. Concepts and practices pertaining to aquacultural extension organization, administration, program development and implementation. Summer.

FISH 6710 AQUATIC MICROBIOLOGY (3) LEC. 3. Pr., BIOL 1030 or BIOL 1037. Overview of the diversity, genetics, physiology, and ecology of aquatic microorganisms, with an emphasis on bacteria, archaea and viruses. Departmental approval.

FISH 6725 MARINE ICHTHYOLOGY (6) LEC. 6. Pr., BIOL 3060 and FISH 6380. General background in the biology of marine fishes and their taxonomy. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS. Summer. Departmental approval ; Admission to Gulf Coast Research Laboratory.

FISH 6735 PRINCIPLES OF MARINE AQUACULTURE (6) LEC. 6. Pr., At least 16 credits in BIOL 6000-8999. Principles and technologies for culture of commercially important marine organisms. Offered at the Gulf Coast Research Laboratory, Ocean Springs, MS. Summer. Acceptance at GCRL; Departmental approval.

FISH 6745 MARINE FISHERIES MANAGEMENT (4) LEC. 4. Overview of practical marine fishery management problems. Offered only at the Gulf Coast Research Laboratory, Ocean Springs, MS. Summer. Departmental approval; Admission to GCRL.

FISH 6970 TOPICS IN FISHERIES AND ALLIED AQUACULTURES (1-4) LEC. Instruction and discussion in a selected current topic in Fisheries, Aquaculture or Aquatic Sciences.

FISH 7230 WATER AND SEDIMENT QUALITY MANAGEMENT IN AQUACULTURE (4) LEC. 3. LAB. 3. Pr., FISH 6220. Advanced treatment of water and sediment quality management in aquaculture. Analytical methods for soil and water quality. Fall. Departmental approval.

FISH 7240 RESOURCE USE AND ENVIRONMENTAL ISSUES IN AQUACULTURE (2) LEC. 2. Resource use, environmental effects, and sustainability of aquaculture with emphasis on approaches to improving efficiency and reducing negative environmental effects. Fall.

FISH 7270 CRUSTACEAN AND MOLLUSCAN AQUACULTURE (4) LEC. 3. LAB. 3. Pr., FISH 5210 or FISH 6210. General biology and culture techniques of the major shrimp, crawfish and shellfish species cultured throughout the world. Spring. Or departmental approval.

FISH 7330 RESERVOIR LIMNOLOGY (3) LEC. 2. LAB. 5. Pr., FISH 5320 or FISH 6320. Consideration of the ecological characteristics of reservoirs as they relate to modern concepts of ecosystem management. Even years. Summer. Departmental approval.

FISH 7340 FISH ECOLOGY (3) LEC. 2. LAB. 3. Pr., BIOL 3060. Study of interactions among fish and their environment. Laboratory will emphasize critical literature reading and experimental approaches. Even years. Fall. BIOL 3060 or equivalent.

FISH 7350 META-ANALYSIS (2) LEC. 2. Meta-Analysis is a quantitative approach for synthesizing results from diverse research studies that address a similar hypothesis.

FISH 7360 MANAGEMENT OF AQUATIC FLORA IN FISHERIES AND AQUACULTURE (4) LEC. 3. LAB. 6. Pr., BIOL 6120. Role of aquatic vegetation in fish production, its utilization and control. Odd years. Summer. BIOL 6120 or equivalent or departmental approval.

FISH 7380 ECOLOGY AND MANAGEMENT OF RIVERINE SYSTEMS (4) LEC. 3. LAB. 3. Pr., BIOL 7370. River systems within a landscape ecology and ecosystem management context. Laboratory sessions stress techniques for assessment and management. Even years. Spring.

FISH 7410 MOLECULAR DIAGNOSIS: PRINCIPLES AND APPLICATIONS (3) LEC. 3. Introduction to molecular biology techniques currently used in disease diagnosis.

FISH 7420 FISH DISEASES (4) LEC. 4. Pr., BIOL 3200. Diagnostic techniques for viral, bacterial, fungal and parasitic diseases of fishes, including etiologic agents, geographical ranges, species susceptibility, clinical signs, clinical pathology, epidemiology and management. Fall. Departmental approval.

FISH 7450 FISH PATHOLOGY (3) LEC. 2. LAB. 3. Pr., FISH 5410 or FISH 6410 or FISH 7420. Morphological and physiological changes in fish with infectious or non-infectious diseases. Even years. Fall. Departmental approval.

FISH 7460 CLINICAL FISH DISEASE DIAGNOSIS (1-3) LEC. Pr., FISH 6410 and FISH 7420. Practical experience in necropsy of diseased fish. Identification of causative agents and prescription of appropriate disease control. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

FISH 7530 FISH POPULATION DYNAMICS (3) LEC. 2. LAB. 4. Pr., FISH 6510 or FISH 5510 and STAT 7040. Derivation of fish population estimates, growth, recruitment and mortality; use of modeling techniques to assess exploited fish populations. Even years. Spring. Departmental approval.

FISH 7540 QUANTITATIVE TECHNIQUES IN FISHERY ASSESSMENT (3) LEC. 2. LAB. 4. Pr., FISH 6510 or FISH 5510 and STAT 7000 and STAT 7040. Quantitative techniques to assess and manage fish populations in freshwater. The laboratory will analyze actual fisheries data using SAS on personal computers. Odd years. Spring. Departmental approval.

FISH 7640 FISH NUTRITION (3) LEC. 3. Fundamental and applied aspects of fish nutrition, including nutrient requirements, physiology of food assimilation, feed preparation, and practical feeding.

FISH 7641 FISH NUTRITION LABORATORY (2) LAB. 6. Coreq., FISH 7640. Laboratory exercises in analysis of fish feeds and formulation and preparation of fish feeds. Summer.

FISH 7650 FISH GENETIC ENHANCEMENT AND RESOURCE MANAGEMENT (3) LEC. 3. Pr., BIOL 3000. Basis of genetic enhancement in aquatic animals by selective breeding, genome manipulation and genetic engineering, genetic maintenance and conservation. Odd years. Fall. Departmental approval.

FISH 7660 MOLECULAR GENETICS AND BIOTECHNOLOGY (4) LEC. 3. LAB. 3. Pr., BIOL 3000. Principles and application of DNA fingerprinting technologies, gene mapping, genetic information and analysis using internet tools, transgenic technologies. Even years. Fall. Departmental approval.

FISH 7735 MARINE PLANKTON (3) LEC. 3. Pr., FISH 7755 or BIOL 7575. Taxonomy of phytoplankton, bacterioplankton and zooplankton in estuaries, coastal seas and open oceans. Dauphin Island Sea Lab. Spring.

FISH 7755 BIOLOGICAL OCEANOGRAPHY (3) LEC. 3. Comprehensive survey of marine organisms and their biological interactions. Taught at Dauphin Island Sea Lab. Spring.

FISH 7765 CHEMICAL OCEANOGRAPHY (3) LEC. 3. In-depth examination of the chemistry of seawater and its relationship with biological, geological and physical processes in the oceans. Dauphin Island Sea Lab. Spring. Departmental approval.

FISH 7775 FISHERIES OCEANOGRAPHY (2) LEC. 2. An examination of the relationship between fish life history, recruitment dynamics, harvest potential, and oceanographic processes. Taught at the Dauphin Island Sea Lab. Departmental approval.

FISH 7900 DIRECTED STUDIES IN FISHERIES I (1-4) IND. SU. Individualized in-depth study on a particular subject under the guidance of a professor. May include directed readings and research. Course may be repeated for a maximum of 4 credit hours.

FISH 7920 INTERNSHIP IN FISHERIES AND AQUACULTURE (1-10) INT. SU. Field experience in aquaculture, fisheries or aquatic resource management on farm or with research, extension or aquatic management agency. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FISH 7930 GRADUATE SEMINAR SERIES (1) LEC. 1. SU. Acquaint students with current research and related activities.

FISH 7950 GRADUATE RESEARCH SEMINAR (1) SEM. 1. SU. Oral presentation and discussion of research in the field of specialization. Course may be repeated for a maximum of 2 credit hours.

FISH 7960 SPECIAL PROBLEMS IN FISHERIES AND ALLIED AQUACULTURES (1-5) LEC. Individual or group project and research in consultation with faculty member on problem in fisheries and allied aquacultures. Course may be repeated for a maximum of 5 credit hours.

FISH 7990 RESEARCH AND THESIS (1-10) MST. Departmental approval. Course may be repeated with change in topics.

FISH 8900 DIRECTED STUDIES IN FISHERIES II (1-4) IND. SU. Individualized in-depth study on a particular subject under the guidance of a professor. May include directed readings and research. Course may be repeated for a maximum of 4 credit hours.

FISH 8930 GRADUATE SEMINAR SERIES (1) LEC. 1. SU. Acquaint students with current research and related activities.

FISH 8950 SEMINAR (1) SEM. 1. SU. Acquaint students with current research and related activities. Departmental approval.

FISH 8960 SPECIAL PROBLEMS IN FISHERIES AND ALLIED AQUACULTURES (1-5) LEC. Individualized work and research in consultation with faculty member on problem in fisheries and allied aquacultures. Course may be repeated for a maximum of 5 credit hours.

FISH 8990 RESEARCH AND DISSERTATION (1-10) DSR. Departmental approval. Course may be repeated with change in topics.

Flight Education - AVMF

Courses

AVMF 2141 FLIGHT ORIENTATION (1) LAB. 2. Pr., 2.25 GPA. Basic flight experience for non-pilots to familiarize aviation majors, engineers, teachers, and other students desiring a limited exposure to flight. Includes ground discussion and aircraft time. Special fee.

AVMF 2150 PRINCIPLES OF PRIVATE FLIGHT (3) LEC. 3. General introduction and preparation for the FAA private pilot written examination. Theory of flight, aircraft and engine performance, regulations, meteorology, navigation, airspace utilization and aviation physiology. Special fee.

AVMF 2171 PRIVATE PILOT FLIGHT TRAINING I (1) LAB. 3. Dual and solo flight instruction and discussion to prepare for FAA Private Pilot Certificate. Special fee.

AVMF 2181 PRIVATE PILOT FLIGHT TRNG II (1) LAB. 3. Continuation of dual and solo flight instruction and discussion to prepare for FAA Private Pilot Certificate. Special fee. Departmental approval.

AVMF 2230 PRIN OF INSTRUMENT FLIGHT (3) LEC. 3. Instruments, FAA regulations, air traffic procedures, radio navigation and aircraft operation and performances as applied to instrument flying. Preparation for the FAA Instrument Pilot written examinations. Special fee.

AVMF 2241 INSTRUMENT FLIGHT TRAINING I (1) LAB. 3. Instruments, FAA regulations, air traffic control procedures, radio navigation and aircraft operation and performances as applied to instrument flying. Preparation for the FAA Instrument Pilot written examination. Special fees. Private Pilot Certificate.

AVMF 2250 COMM FLIGHT PROBLEMS (3) LEC. 3. Pr., AVMF 2171. FAA regulations, high altitude operations aerodynamics, commercial flight maneuvers, environmental, ice control, retractable landing gear and aircraft performances as applied to commercial flying. Preparation for the FAA Commercial Pilot knowledge examination. Special fee. Private Pilot Certificate.

AVMF 2251 INSTRUMENT FLIGHT TRAINING II (1) LAB. 3. Continuation of Instruments, FAA regulations, air traffic control procedures, radio navigation and aircraft operation and performances as applied to instrument flying. Preparation for the FAA Instrument Pilot written examination. Special fee. Departmental approval.

AVMF 2261 COMM FLIGHT TRAINING II (1) LAB. 3. Flight training toward the Commercial Pilot Certificate. Special fee. Departmental approval.

AVMF 2271 COMM FLIGHT TRAIN III (1) LAB. 3. Pr., AVMF 2261. Continuation of flight training towards the Commercial Pilot Certificate. Emphasis on advanced commercial maneuvers, complex airplane systems and cross country flying. Special fee.

AVMF 4271 MULTI ENGINE TRAINING (1) LAB. 2. Pr., AVMF 2271. Specialized instruction in methods and techniques of multi engine aircraft operations. Sufficient classroom and flight instruction is given under FAA Part 141 to qualify for the FAA Multi-Engine Land Certificate. Special Fees. Or Commercial Pilot Certificate with Instrument rating and Departmental approval.

AVMF 4280 PRINCIPLES FLIGHT INSTRUCT I (2) LEC. 3. Principles of teaching as applied to instructing, analyzing and evaluating flight students. Emphasis is on preparation for the FAA Fundamentals of Instruction and the Flight Instructor-Airplane Knowledge Examinations. Commercial Pilot Certificate or departmental approval.

AVMF 4281 FLIGHT INSTRUCTION TRNG I (1) LAB. 3. Pr., AVMF 2271. Discussion, instruction and arranged practice in flight instruction in preparation for the FAA Flight Instructor Certificate. Special fee. Or Commercial Pilot Certificate with Instrument Rating.

AVMF 4290 FLIGHT INSTRUCTION TRNG I (2) LEC. 2. Pr., AVMF 4280. Continuation of principles of teaching as applied to instructing and evaluating flight students. Emphasis is on preparation for the FAA Fundamentals of Instruction and the Flight Instructor-Airplane Knowledge Examinations.

AVMF 4291 PRIN OF FLIGHT INSTRUCT II (1) LAB. 3. Pr., AVMF 4281. Continuation of discussion, instruction, and arranged practice in flight instruction in preparation for the FAA Flight Instructor Certificate. Special fee.

AVMF 4320 PRINCIPLES OF PROFESSION FLGHT (3) LEC. 3. Pr., AVMF 2230. Advanced aircraft performance, IFR operations, high altitude meteorology and FAR Part 135. Industry opportunities and required qualifications. Special fee. Departmental approval.

AVMF 4331 TRANSPORT AIRCRAFT FLGT TRNG (1) LAB. 2. Includes instrument and night instruction, emergency procedures and actual air transportation operations. Preparation for the Airline Transport Pilot Certification, if otherwise qualified. Special fees. Departmental approval.

AVMF 4351 INSTRUMENT FLIGHT INSTRUCT TRNG (1) LAB. 2. Pr., AVMF 4280 and AVMF 4291. Discussion, instruction, and arranged practice in instrument flight instruction in preparation for the FAA Instrument Instructor Certificate. Special fees. Or CFI and departmental approval.

AVMF 4371 MULTI-ENGINE FLGHT INSTR TRNG (1) LAB. 2. Discussion, instruction and arranged practice in multi-engine flight instruction in preparation for the Multi-engine Instructor Certificate. Special fees. Departmental approval.

AVMF 4400 APPLIED AERODYNAMICS AND PROPULSION SYSTEMS (3) LEC. 3. Pr., PHYS 1500., Or departmental approval The principles of aerodynamics and propulsion and how aerodynamic factors affecting lift, thrust, drag, in-air performance, stability and flight control. The aircraft design process is covered from concept to test flight.

Food Science - FDSC

Courses

FDSC 1000 INTRODUCTORY FOOD SCIENCE (3) LEC. 3. Overview of food science discipline including food selection, food composition, food safety and sanitation, food processing, packaging, commodity types, and food laws.

FDSC 4290 PROFESSIONAL DEVELOPMENT IN FOOD SCIENCE (1) LEC. 1. Preparing for careers; enhancing computer and communication skills; planning for professional advancement. Spring.

FDSC 4910 FOOD SCIENCE PRACTICUM (3) PRA. 3. Practical experience in food industry, governmental laboratories, or other food science sites.

FDSC 4920 FOOD SCIENCE INTERNSHIP (3) INT. 3. SU. Pr., departmental approval. Practical on-the-job training in the poultry or food industry. Course may be repeated for a maximum of 9 credit hours.

FDSC 4980 UNDERGRADUATE RESEARCH (2-4) IND. Directed research in the area of specialty within the department. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

FDSC 5150/5153 FOOD LAWS AND REGULATIONS (3) LEC. 3. Federal and state laws and regulations and case history affecting food production, processing, packaging, marketing and distribution of food and food productions. History of food law, enactment of laws and regulations, legal research and regulatory agencies. Course is taught exclusively online. Credit will not be given for both FDSC 5150 and FDSC 6150.

FDSC 5200/5203 DEVELOPING, IMPLEMENTING, AND AUDITING FOOD SAFETY PROGRAMS (3) LEC. 3. Theory and practice of food safety program design and implementation; includes internal and third-party audits. Credit will not be given for both FDSC 5200 and FDSC 6200.

FDSC 5430 FOOD CHEMISTRY (4) LEC. 3. LAB. 3. Pr., BCHE 3200., Or departmental approval. Chemistry of food components; chemical and physical changes of food during processing and storage. Credit will not be given for both FDSC 5430 and FDSC 6430. Spring.

FDSC 5450 FOOD ANALYSIS AND QUALITY CONTROL (4) LEC. 3. LAB. 3. Pr., FDSC 5430., Or departmental approval. Principles and application of chemical and instrumental food analyses; quality control procedures. Credit will not be given for both FDSC 5450 and FDSC 6450. Fall.

FDSC 5640 FOOD PRODUCT DEVELOPMENT (4) LEC. 2. LAB. 6. Pr., FDSC 5430., Or departmental approval. Food product development from concept to market. Credit will not be given for both FDSC 5640 and FDSC 6640. Spring.

FDSC 5730 SENSORY EVALUATION (3) LEC. 2. LAB. 2. History and methods of sensory testing of food products, factors affecting results. May count one of the following: ANSC 5730, ANSC 6730, FDSC 5730, FDSC 6730.

FDSC 5770 FOOD PLANT SANITATION (4) LEC. 3. LAB. 3. Pr., BIOL 3200., Or departmental approval. Sanitary regulations and procedures for hazard control and quality assurance in food industry. Credit will not be given for both FDSC 5770 and FDSC 6770. Fall.

FDSC 6150/6156 FOOD LAWS AND REGULATIONS (3) LEC. 3. Federal and state laws and regulations and case history affecting food production, processing, packaging, marketing, and distribution of food and food productions. History of food law, enactment of laws and regulations, legal research and regulatory agencies. Course is taught exclusively online. Credit will not be given for both FDSC 6150 and FDSC 5150.

FDSC 6200/6206 DEVELOPING, IMPLEMENTING, AND AUDITING FOOD SAFETY PROGRAMS (3) LEC. 3. Theory and practice of food safety program design and implementation; includes internal and third-party audits. Credit will not be given for both FDSC 6200 and FDSC 5200.

FDSC 6430 FOOD CHEMISTRY (4) LEC. 3. LAB. 3. Pr., BCHE 3200., Or departmental approval. Chemistry of food components; chemical and physical changes of food during processing and storage. Credit will not be given for both FDSC 5430 and FDSC 6430. Spring.

FDSC 6450 FOOD ANALYSIS AND QUALITY CONTROL (4) LEC. 3. LAB. 3. Pr., FDSC 6430., Or departmental approval. Principles and application of chemical and instrumental food analyses; quality control procedures. Credit will not be given for both FDSC 6450 and FDSC 5450. Fall.

FDSC 6640 FOOD PRODUCT DEVELOPMENT (4) LEC. 2. LAB. 6. Pr., FDSC 6430. Food product development from concept to market. Credit will not be given for both FDSC 6640 and FDSC 5640. Spring. Departmental approval.

FDSC 6730 SENSORY EVALUATION (3) LEC. 2. LAB. 2. History and methods of sensory testing of food products, factors affecting results. May count one of the following: ANSC 5730, ANSC 6730, FDSC 5730, FDSC 6730.

FDSC 6770 FOOD PLANT SANITATION (4) LEC. 3. LAB. 3. Pr., BIOL 3200., Or departmental approval. Sanitary regulations and procedures for hazard control and quality assurance in food industry. Credit is not allowed for both FDSC 5770 and FDSC 6770. Fall.

FDSC 7200 CARBOHYDRATE CHEMISTRY AND FUNCTIONALITY IN FOODS (3) LEC. 3. Pr., FDSC 6430. Chemistry and functionality of sugars, starches and hydrocolloids as applied to food systems. Departmental approval.

FDSC 7210 FOOD PROTEINS AND FATS (3) LEC. 3. Pr., FDSC 6430. Advanced theories and practices of food science in the areas of protein and fat. Departmental approval.

FDSC 7930 ADVANCED INDEPENDENT STUDY (1-6) IND. Departmental approval. Advanced reading or research approved and supervised by a faculty member. Course may be repeated for a maximum of 6 credit hours.

FDSC 7960 SPECIAL PROBLEMS (1-4) IND/ST1. Departmental approval. Critical analysis of classic and current research. Course may be repeated for a maximum of 8 credit hours.

FDSC 7980/7986 NONTHESIS RESEARCH (1-4) RES. Departmental approval; enrolled as FDSG MAg student. Research conducted as part of the Master of Agriculture degree.

FDSC 7990 RESEARCH AND THESIS (1-10) MST. Research in an area of specialization. Course may be repeated with change in topic. Departmental approval.

FDSC 8990 RESEARCH AND DISSERTATION (1-10) DSR. Research in an area of specialization. Course may be repeated with change in topic. Departmental approval.

Foreign Languages - FLNG

Courses

FLNG 1000 ELEMENTARY FOREIGN LANGUAGE ABROAD (1-10) AAB/FLD. For languages not currently taught in the department of Foreign Languages and Literatures, but taken through approved distance learning or study abroad programs. Credit awarded in consultation with Department chair. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FLNG 1010 ELEMENTARY FOREIGN LANGUAGE (4) LEC. 4. For languages not currently taught in the Department of Foreign Language and Literatures. Departmental approval.

FLNG 1020/1023 ELEMENTARY FOREIGN LANGUAGE (4) LEC. 4. Pr., FLNG 1010. For languages not currently taught in the Department of Foreign Language and Literatures. Departmental approval.

FLNG 2000 INTERMEDIATE FOREIGN LANGUAGE (1-10) AAB/LEC. For languages not currently taught in the Department of Foreign Languages and Literatures, but taken through approved distance learning or study abroad programs. Credit awarded in consultation with department chair. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FLNG 4997 HONORS THESIS (1-6) IND. Pr., Honors College. Directed readings and research culminating in a thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

Foreign Lng-Asian Culture - FLAS

Courses

FLAS 3450 TOPICS IN ASIAN CULTURE (3) LEC. 3. Study of traditional and/or modern Asian culture with special emphasis on cross-cultural and transnational interactions with-in Asia, as well as with the West. Course may be repeated for a maximum of 6 credit hours.

Foreign Lng-Chinese - FLCN

Courses

FLCN 1000 ELEMENTARY CHINESE ABROAD (1-10) AAB/IND. Pr., Dept. approval. Elementary coursework on approved study-abroad program. Course may be repeated for a maximum of 10 credit hours.

FLCN 1010 ELEMENTARY CHINESE I (4) LEC. 4. Exposure to Chinese language and culture for students with little or no knowledge of Chinese.

FLCN 1020 ELEMENTARY CHINESE II (4) LEC. 4. Pr., FLCN 1010. Fulfills CLA foreign language core requirement. Continued exposure to Chinese language and culture. Departmental approval.

FLCN 2000 INTERMEDIATE CHINESE ABROAD (1-10) AAB/IND. Pr., Dept. approval. Variable credit, determined by dept. Intermediate coursework on approved study-abroad program. Course may be repeated for a maximum of 10 credit hours.

FLCN 2010 INTERMEDIATE CHINESE I (4) LEC. 4. Pr., FLCN 1020. Pr., Dept. approval. Continued exposure to Chinese culture; introduction to intermediate language skills.

FLCN 2020 INTERMEDIATE CHINESE II (4) LEC. 4. Pr., FLCN 2010. Pr., Dept. approval. Continued exposure to Chinese culture; intermediate language skills with emphasis on grammar.

FLCN 3000 ADVANCED CHINESE ABROAD (1-10) AAB/IND. Pr., Dept. approval. Variable credit, determined by dept. Advanced coursework on approved study-abroad program. Course may be repeated for a maximum of 10 credit hours.

FLCN 3010 CHINESE COMPOSITION AND CONVERSATION (3-6) AAB/LEC. Pr., FLCN 2010. Pr., Departmental approval. Intense practice of spoken and written Chinese, both text- and situation-based. Course may be repeated for a maximum of 6 credit hours.

FLCN 3050 CHINESE CINEMA (3) LEC. 3. Major works of Chinese cinema from 1920s to present with emphasis on cultural and literary aspects.

FLCN 3200 LANGUAGES ACROSS THE CURRICULUM SEMINAR IN CHINESE (1) IND. 1. Pr., FLCN 1020., or Departmental approval. This course is offered in combination with another discipline (other than language). Students read texts from the other discipline in Chinese and meet weekly to discuss class topics in Chinese. Course may be repeated for a maximum of 3 credit hours.

FLCN 3450 TOPICS IN CHINESE LITERATURE AND CULTURE (3-6) AAB/LEC. Directed study of topics of interest.

FLCN 3510 INTRODUCTION TO CHINESE CULTURE IN ENGLISH (3-6) LEC. Chinese culture as depicted in art, film, literature, history. Course may be repeated for a maximum of 6 credit hours.

FLCN 3930 DIRECTED STUDY IN CHINESE (1-6) IND. Pr., FLCN 2010. Directed study in area of special interest for the superior student in Chinese. Course may be repeated for a maximum of 6 credit hours.

Foreign Lng-French - FLFR

Courses

FLFR 1000 ELEMENTARY FRENCH ABROAD (1-10) AAB/FLD. Course work at the elementary level. This credit may substitute for required 1000 level courses in French. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FLFR 1010 ELEMENTARY FRENCH I (4) LEC. 3. LAB. 2. Basic language skills with emphasis on conversation. Exposure to culture.

FLFR 1020 ELEMENTARY FRENCH II (4) LEC. 3. LAB. 2. Pr., LFRE score of 0241 or FLFR 1010. or FL placement test. Basic language skills with emphasis on conversation. Exposure to culture. Fulfills College of Liberal Arts core foreign language requirement. Pr., FLFR 1010.

FLFR 1030 READING PROFICIENCY IN FRENCH (3) LEC. 3. SU. For graduate students, who should consult their advisors for specific departmental language requirements. May not be used to fulfill undergraduate language requirements.

FLFR 2000 INTERMEDIATE FRENCH ABROAD (1-10) AAB/FLD. For course work at the intermediate level, taken on an approved study program abroad. The student should consult with the French undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FLFR 2010 INTERMEDIATE FRENCH I (4) LEC. 3. LAB. 2. Pr., LFRE score of 0325 or FLFR 1020.or FL placement test. Language skills, grammar review, readings in French culture, literature, and history. FLFR 1020.

FLFR 2020 INTERMEDIATE FRENCH II (4) LEC. 3. LAB. 2. Pr., LFRE score of 0372 or FLFR 2010.or FL placement test. Systematic review of problems in French grammar for speakers of English. Prepares students for conversation, composition and civilization in the third-year sequence.

FLFR 3000 JUNIOR/ADVANCED FRENCH ABROAD (1-9) AAB/FLD. Course work at the junior/advanced level, taken on an approved study program abroad. The student should consult with the undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLFR 3010 FRENCH PHONETICS AND DICTION (3) LEC. 3. Pr., LFRE score of 0428 or FLFR 2020.or FL placement test. Basic principles of French phonetics through sound recognition discrimination and intensive practice.

FLFR 3030 FRENCH CONVERSATION (3) LEC. 3. Pr., LFRE score of 0428 or FLFR 2020.or FL placement test. Intensive practice in spoken French, based on texts and everyday situations, especially in contemporary French society. Includes review of vocabulary.

FLFR 3040 FRENCH COMPOSITION (3) LEC. 3. Pr., LFRE score of 0428 or FLFR 2020.or FL placement test. Review of grammar and practice in writing on topics ranging from descriptions and personal opinions to current affairs and social problems.

FLFR 3050 FRENCH CINEMA (3) LEC. 3. Pr., FLFR 2020.Or placement exam. Sampling of important films from the beginnings of French cinema in 1895 to the present day, including the intellectual, historical, cultural, and literary matrix of each film.

FLFR 3100 INTRODUCTION TO FRENCH LITERATURE (3) LEC. 3. Pr., LFRE score of 0428 or FLFR 3040 or FLFR 3030.Provides grounding in basic analytical approaches, language and organizational skills needed to discuss French literature effectively and coherently, orally or in writing. Departmental approval.

FLFR 3110 FRENCH CIVILIZATION (3) LEC. 3. Pr., FLFR 2020.Consideration of topical aspects of the cultural heritage of France, as reflected in present day life patterns, traditions and institutions. Departmental approval.

FLFR 3140 SURVEY OF FRENCH LITERATURE I (3) LEC. 3. Pr., FLFR 3030 or FLFR 3040., Or departmental approval. The Middle Ages to the 1800's. Coherent and effective writing in French.

FLFR 3150 SURVEY OF FRENCH LITERATURE II (3) LEC. 3. Pr., FLFR 3030 or FLFR 3040., Or departmental approval. Readings in French literature from the 19th Century to the present (prose, theatre, and poetry), centered on a theme or topic.

FLFR 3200 LANGUAGES ACROSS THE CURRICULUM SEMINAR IN FRENCH (1) LEC. 1. Pr., FLFR 2010.Language component with readings and in-class discussions to complement a lecture course in English and in a discipline other than language. Parallel enrollment is recommended. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLFR 3310/3313/3314 BUSINESS FRENCH (3) LEC. 3. Pr., Completed one course from FLFR 3000-3999 or LFRE minimum score of 428.And one FLFR 3000-level course. Intensive practice in preparing commercial correspondence and reading contracts, agreements, and related documents in French. Emphasis will be placed on the acquisition of a business-oriented vocabulary.

FLFR 3510 TOPICS IN FRENCH LITERATURE AND CULTURE (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127.Topics drawing on French literature, history, fine arts, or culture of general interest to students with little or no previous study of French.

FLFR 3930 DIRECTED STUDIES (1-3) AAB/IND. Directed study in an area of special interest to the superior student in French. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FLFR 4000 SENIOR/ADVANCED FRENCH ABROAD (1-9) AAB/FLD. Course work at the senior/advanced level, taken on an approved study program abroad. The student should consult with the undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLFR 4020 ADVANCED GRAMMAR AND STYLISTICS (3) LEC. 3. Pr., FLFR 3040.FLFR 3040 or equivalent. Practice in writing and analyzing French texts, with emphasis on advanced grammar topics and stylistics.

FLFR 4030 FRENCH CONTINUING CONVERSATION (3) LEC. 3. Pr., FLFR 3030 or FLFR 3040., Or departmental approval. Continuing practice in spoken French to maintain and upgrade proficiency. Major credit will not be given for FLFR or FLFT majors.

FLFR 4040 FRENCH CONTINUING COMPOSITION (3) LEC. 3. Pr., FLFR 3030 or FLFR 3040., Or departmental approval. Continuing practice in written French to maintain and upgrade proficiency.

FLFR 4310 FRENCH FOR INTERNATIONAL TRADE (3) LEC. 3. Pr., A grade of D or higher in FLFR 3000-3999., Or departmental approval. Practical exercises in preparing and translating trade correspondence and documents in French as well as assigned group work and case studies under simulated real life pressures.

FLFR 4410 ADVANCED TOPICS IN FRENCH LITERATURE, CULTURE OR LANGUAGE (3) LEC. 3. Pr., Completed one course from FLFR 3000-3999 or LFRE minimum score of 428. The study of a special aspect or theme of the French Language, Literature, or Culture. Three 3000-level French courses or departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLFR 4740 TRANSLATION (3) LEC. 3. Pr., FLFR 3000-3999 and FLFR 3040. Basic techniques and problem areas in translating from French into English and from English into French.

FLFR 4930 ADVANCED DIRECTED STUDY (1-3) IND. Pr., A grade of D or higher in FLFR 3000-3999. Directed study in area of special interest for the superior student in French. Course may be repeated for a maximum of 6 credit hours.

FLFR 4980 FRENCH SENIOR CAPSTONE (1) IND. 1. SU. Assessment of language skills through written paper and oral exam. Fall, Spring.

FLFR 5310 FRENCH FOR INTERNATIONAL TRADE (3) LEC. 3. Pr., A grade of D or higher in FLFR 3000-3999. Practice in handling, preparing and translating international trade correspondence documents and related legal procedures in French. Development of case studies and other international trade group work in French and in English under simulated real life pressures. Departmental approval.

FLFR 5970 SPECIAL TOPICS IN ADVANCED LANGUAGE SKILLS (3) LEC. 3. Pr., A grade of D or higher in FLFR 3000-3999. Review of principal grammatical structures, develop skills through appropriate exercises and class assignments, and improve stylistic sensitivity by exposure to a variety of language samples. Departmental approval.

FLFR 5980 SEMINAR IN FRENCH LITERARY GENRES AND MOVEMENTS (3) LEC. 3. Pr., A grade of D or higher in FLFR 3000-3999. Seminar in advanced languages skills or topics from French literary genres and movements. Departmental approval.

FLFR 6310 FRENCH FOR INTERNATIONAL TRADE (3) LEC. 3. Pr., A grade of D or higher in FLFR 3000-3999. Practice in handling, preparing, and translating international trade correspondence documents and related legal procedures in French. Departmental approval.

FLFR 6970 SPECIAL TOPICS IN ADVANCED LANGUAGE SKILLS (3) LEC. 3. Pr., A grade of D or higher in FLFR 3000-3999. Review of principal grammatical structures, develop skills through appropriate exercises and class assignments, and improve stylistic sensitivity by exposure to a variety of language samples. Departmental approval.

FLFR 6980/6986 SEMINAR IN FRENCH LITERARY GENRES AND MOVEMENTS (3) AAB/SEM. 3. Pr., A grade of D or higher in FLFR 3000-3999. Seminar in advanced languages skills or topics from French literary genres and movements. Departmental approval.

FLFR 7000 GRADUATE FRENCH ABROAD (1-9) AAB/FLD. For course work at the graduate level taken on an approved study program abroad. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLFR 7010 ADVANCED FRENCH CIVILIZATION (3) LEC. 3. An in-depth study of French civilization with emphasis on the relationship of history, arts, and literature from prehistoric times to the present. Departmental approval.

FLFR 7020 ADVANCED COMPOSITION AND STYLISTICS (3) LEC. 3. Graduate status, or departmental approval. Acquisition of advanced writing skills in French. Techniques and strategies of appropriate stylistic expression through analysis of various sources of texts: Literary, historical, commercial, popular, etc. Graduate status, or departmental approval.

FLFR 7090 INTRODUCTION TO COLLEGE LEVEL FRENCH INSTRUCTION (1) LEC. 1. SU. Orientation to French graduate studies. Introduction to College-level French instruction, critical observation of performance and guidance by designated instructors. Departmental approval.

FLFR 7430 FRENCH PRESS (3) LEC. 3. Political, intellectual and cultural events in France, Europe, and the world as reflected in major French daily and weekly publications. Departmental approval.

FLFR 7740 ADVANCED TRANSLATION (3) LEC. 3. Acquisition of skills for translation from French to English and from English to French using a wide variety of texts including historical, literary, commercial, and popular sources. Departmental approval.

FLFR 7920 FOREIGN LANGUAGE CAREER INTERNSHIP (1-6) INT. Experiential learning either in the business community or in university-sponsored programs outside the United States. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FLFR 7930 DIRECTED STUDIES IN LANGUAGE SKILLS (3) LEC. 3. Course may be repeated for a maximum of 6 credit hours.

FLFR 7960 SPECIAL PROBLEMS IN FRENCH LANGUAGE, LITERATURE OR CULTURE (1-3) IND. Study in a specialized area under close supervision of an instructor. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FLFR 7970 SPECIAL TOPICS (1-3) AAB/SEM. The detail study of a specific aspect of the French language, literature, or Culture. Fall. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

Foreign Lng-German - FLGR

Courses

FLGR 1000 ELEMENTARY GERMAN ABROAD (1-10) IND. Course work at the elementary level. This credit may substitute for required 1000 level courses in German. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FLGR 1010 ELEMENTARY GERMAN I (4) LEC. 3. LAB. 2. Fundamentals of German language skills stressed. Exposure to Germanic civilization. For students with no previous background or less than two years of high school German.

FLGR 1020 ELEMENTARY GERMAN II (4) LEC. 3. LAB. 2. Pr., LGER score of 0241 or FLGR 1010.or FL placement test Review of basic German grammar and vocabulary. Fundamentals of German language skills with progressive emphasis on conversation. Fulfills the College of Liberal Arts foreign language core requirement.

FLGR 1030 READING PROFICIENCY IN GERMAN (3) LEC. 3. Reading proficiency for graduate students, who should consult their advisors for specific departmental language requirements. May not be used to satisfy undergraduate language requirements. Fall.

FLGR 1100/1103 ACCELERATED ELEMENTARY GERMAN (6) LEC. 6. Accelerated Elementary German teaches basic concepts of German grammar, vocabulary, and culture; it fulfills the CLA foreign language requirement.

FLGR 2000 INTERMEDIATE GERMAN ABROAD (1-10) AAB/FLD. Course work at the intermediate level taken on an approved study program abroad. The student should consult with the German undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FLGR 2010 INTERMEDIATE GERMAN I (4) LEC. 3. LAB. 2. Pr., LGER score of 0325 or FLGR 1020.or FL placement test. Language skills stressed; structural review and composition; readings in German literature and German civilization.

FLGR 2020 INTERMEDIATE GERMAN II (4) LEC. 3. LAB. 2. Pr., LGER score of 0372 or FLGR 2010.or FL placement test. Continued review of German grammar and syntax, vocabulary building. Additional work in composition; readings in German literature and civilization.

FLGR 3000 JUNIOR ADVANCED GERMAN ABROAD (1-10) AAB/FLD. Course work at the advanced level taken on an approved study program abroad. The student should consult with the German undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FLGR 3010 BEGINNING GERMAN COMPOSITION AND CONVERSATION (3) LEC. 3. Pr., LGER score of 0428 or FLGR 2020.or FL placement test. Concentration on developing skills in written and spoken German. Review of German grammar and syntax, vocabulary building. Work in German phonology. Fall.

FLGR 3020 INTERMEDIATE GERMAN COMPOSITION AND CONVERSATION (3) LEC. 3. Pr., LGER score of 0428 or FLGR 2020.or FL placement test. Further development of skills in written and spoken German. Continued review of selected topics of grammar and syntax, and vocabulary acquisition. Spring.

FLGR 3030 ADVANCED GERMAN COMPOSITION AND CONVERSATION (3) LEC. 3. Pr., LGER score of 0428 or FLGR 2020.or FL placement test. Introduce linguistic principles governing mechanics of spoken German. Emphasizes English-German contrast and pronunciation difficulties. Further development of conversation skills.

FLGR 3050 GERMAN CINEMA (3-6) LEC. Sampling of important films from the 1920s to the present, including the intellectual, historical, cultural, and literary matrix of each film. Course may be repeated for a maximum of 6 credit hours.

FLGR 3100 INTRODUCTION TO GERMAN LITERATURE (3) LEC. 3. Pr., FLGR 2020. Basic literary genres and major figures in German literature from the 18th century to the present; literary methodologies and bibliographical tools. Required of all majors. Fall. Departmental approval.

FLGR 3110 GERMAN CULTURE AND CIVILIZATION I (3) LEC. 3. Pr., FLGR 2020. Social, political, and cultural history of Germany from the Germanic tribes to 1870. Fall. Departmental approval.

FLGR 3120 GERMAN CULTURE AND CIVILIZATION II (3) LEC. 3. Pr., FLGR 2020. Social, political and cultural history of Germany from 1870 to the present. Spring. Departmental approval.

FLGR 3150 TOPICS IN GERMAN LITERATURE, LANGUAGE AND CULTURE (3) LEC. 3. Pr., FLGR 2020 or LGER score of 0428. Critical study of specific literary, linguistic and/or cultural topics in German studies. Departmental approval. Course may be repeated with change in topics.

FLGR 3200 LANGUAGES ACROSS THE CURRICULUM SEMINAR IN GERMAN (1) LEC. 1. Pr., FLGR 2010. Language component with readings and in-class discussions to complement a lecture course in English and in a discipline other than language. Parallel enrollment is recommended. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLGR 3930 DIRECTED STUDIES IN GERMAN (1-3) IND. Pr., LGER score of 0428. Directed study in area of special interest for the superior student in German. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLGR 4000 SENIOR ADVANCED GERMAN ABROAD (1-10) AAB/FLD. Course work at the senior/advanced level taken on an approved study program abroad. The student should consult with the German undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FLGR 4110 MASTERPIECES OF GERMAN LITERATURE I (3) LEC. 3. Pr., FLGR 3010. Selected readings by representative authors from the periods of German Classicism, Romanticism, and Realism Naturalism. Fall. Departmental approval.

FLGR 4120 MASTERPIECES OF GERMAN LITERATURE II (3) LEC. 3. Pr., FLGR 3010. Selected readings by representative authors from the periods of the early 20th century, Weimar Republic, and Postwar Germany. A Departmental approval.

FLGR 4150 GERMAN DRAMA (3) LEC. 3. Pr., Completed one course from FLGR 3000-3999 or LGER minimum score of 438. Consideration, analysis, and criticism of selected German theater works by representative authors. Fall. Departmental approval.

FLGR 4160 CONTEMPORARY GERMAN LITERATURE (3) LEC. 3. Pr., Completed one course from FLGR 3000-3999 or LGER minimum score of 438. Consideration, analysis and criticism of recent selected German literary works. 3 FLGR 3000-level German courses. Departmental approval.

FLGR 4310 GERMAN FOR BUSINESS AND ECONOMICS I (3) LEC. 3. Pr., FLGR 2020. Emphasis on speaking, listening, reading and writing skills in professional, commercial German. Familiarization with German and European business practices. Fall. Departmental approval.

FLGR 4320 GERMAN FOR BUS AND ECONOMICS II (3) LEC. 3. Refinement of language proficiency skills. Active preparation for Prüfung Wirtschaftsdeutsch International, an examination recognized worldwide by business and industry. Spring. Departmental approval.

FLGR 4330 GERMAN BUSINESS, MEDIA, AND SOCIETY (3) LEC. 3. Pr., FLGR 2020 or LGER score of 0428. German language for business German media and society.

FLGR 4510 GERMAN LITERATURE TRANSLATION I (3) LEC. 3. From Goethe to Thomas Mann. Reading and analysis of significant literary works by major German writers from 1750 to 1945. Departmental approval.

FLGR 4520 GERMAN LITERATURE TRANSLATION II (3) LEC. 3. Postwar German literature. Reading and analysis of significant literary works by major German writers from 1945 to the present. Departmental approval.

FLGR 4910 PRACTICUM IN GERMAN (1-6) PRA. Number of hours and applicability toward major to be determined in consultation with the undergraduate director. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FLGR 4950 SEMINAR IN GERMAN LITERATURE (3) SEM. 3. Pr., At least 3 credits in FLGR 3000-3999. Readings in German literature from selected periods or in selected genres. Departmental approval.

FLGR 4980 SENIOR CAPSTONE (1) IND. 1. SU. Assessment of language skills through written paper and oral exam. Fall, Spring.

Foreign Lng-Global Cultures - FLGC

Courses

FLGC 1150 GLOBAL FLUENCY AND AWARENESS (3) LEC. 3. Introduction to non-native languages as representational reflections of two different cultural regions and impetus for in-depth analysis of global identities.

Foreign Lng-Greek - FLGK

Courses

FLGK 1010 ELEMENTARY CLASSICAL GREEK I (4) LEC. 3. LAB. 2. Classical Greek. Introduction to the knowledge and skills necessary for reading ancient Greek. Fall.

FLGK 1020 ELEMENTARY CLASSICAL GREEK II (4) LEC. 3. LAB. 2. Pr., FLGK 1010. Classical Greek. Introduction to the knowledge and skills necessary for reading ancient Greek. Fulfills College of Liberal Arts foreign language core requirement. Spring. Departmental approval.

FLGK 2010 INTERMEDIATE CLASSICAL GREEK I (4) LEC. 3. LAB. 2. Pr., FLGK 1020. Classical Greek. Introduction to reading ancient Greek prose and poetry. Fall. Departmental approval.

FLGK 2020 INTERMEDIATE CLASSICAL GREEK II (4) LEC. 3. LAB. 2. Pr., FLGK 2010. Classical Greek. Continuation of FLGK 2010. Spring. Departmental approval.

FLGK 3110 CLASSICAL GREEK LITERATURE (3) LEC. 3. LAB. 2. Pr., FLGK 2010. Advanced readings in ancient Greek prose and poetry. Departmental approval. Course may be repeated with change in topics.

FLGK 3510 CLASSICAL GREEK LITERATURE AND CULTURE IN TRANSLATION (3) LEC. 3. Classical Greek cultural practices and ideology with a focus on literary evidence. Readings in English. Course may be repeated for a maximum of 6 credit hours.

FLGK 3930 DIRECTED STUDIES IN ANCIENT GREEK LITERATURE (1-3) IND. Independent study of classical Greek text(s). Topic proposed by student in conjunction with faculty advisor. Departmental approval. Course may be repeated with change in topics.

Foreign Lng-Italian - FLIT

Courses

FLIT 1000 ELEMENTARY ITALIAN ABROAD (1-10) AAB/FLD. Course work at the elementary level taken on an approved study program abroad. The student should consult the Italian undergraduate advisor for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FLIT 1010 ELEMENTARY ITALIAN I (4) LEC. 3. LAB. 2. For students with little or no knowledge of Italian. Basic language skills. Exposure to culture. Fall.

FLIT 1020 ELEMENTARY ITALIAN II (4) LEC. 3. LAB. 2. Pr., FLIT 1010. Continuation of basic language skills. Exposure to culture. Fulfills the College of Liberal Arts foreign language core requirement. Departmental approval.

FLIT 2000 INTERMEDIATE ITALIAN ABROAD (1-10) AAB/FLD. Course work at the intermediate level taken on an approved study program abroad. The student should consult with the Italian undergraduate advisor for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FLIT 2010 INTERMEDIATE ITALIAN I (4) LEC. 3. LAB. 2. Pr., FLIT 1020. Special emphasis on conversation and Italian culture. Language skills stressed, grammar review. Fall. Departmental approval.

FLIT 2020 INTERMEDIATE ITALIAN II (4) LEC. 3. LAB. 2. Pr., FLIT 2010. Special emphasis on reading skills and Italian culture. Review of Italian grammar for English speakers. Spring. Departmental approval.

FLIT 3000 JUNIOR ADVANCED ITALIAN ABROAD (1-9) AAB/FLD. Course work at the junior/advanced level taken on an approved study program abroad. The student should consult with the Italian undergraduate advisor for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLIT 3030 ITALIAN CONVERSATION (3) LEC. 3. Pr., FLIT 2010. Intensive practice in spoken Italian, based on texts and everyday situations, especially in contemporary Italian society. Includes review of vocabulary. Departmental approval.

FLIT 3040/3044 ITALIAN COMPOSITION (3) LEC. 3. Pr., FLIT 2020. Review of grammar and practice in writing on topics ranging from descriptions and personal opinions to current affairs and social problems. Or departmental approval.

FLIT 3050/3054 ITALIAN CINEMA (3) LEC. 3. Sampling of important films from the time of the telefoni bianchi (1937) to the present (major directors and trends), including the intellectual, historical, cultural, and literary matrix of each film.

FLIT 3110 SPECIAL TOPICS IN ITALIAN (3) LEC. 3. Pr., FLIT 2010. Supplementary instruction in Italian language, literature, culture. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLIT 3200 LANGUAGES ACROSS THE CURRICULUM SEMINAR IN ITALIAN (1) LEC. 11. Pr., FLIT 1020. Language component with readings and in-class discussions to complement a lecture course in English and in a discipline other than language. Parallel enrollment is recommended. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLIT 3510 INTRODUCTION TO ITALIAN CULTURE IN ENGLISH (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. Significant aspects of Italian culture, as reflected in arts, film, literature, history. Course may be repeated for a maximum of 9 credit hours.

FLIT 3930 DIRECTED STUDIES IN ITALIAN (1-3) IND. Directed study in area of special interest for the superior student in Italian. Departmental approval. Course may be repeated with change in topics.

FLIT 5970 SEMINAR IN ITALIAN LITERATURE, LINGUISTICS, AND CULTURE (3) LEC. 3. This course is designed to give students an opportunity to pursue topics of special interest, not treated in other course offerings. Each student will develop an individual plan of study, with faculty approval. Departmental approval.

FLIT 6970/6976 SEMINAR IN ITALIAN LITERATURE, LINGUISTICS, AND CULTURE (3) LEC. 3. This course is designed to give students an opportunity to pursue topics of special interest, not treated in other course offerings. Each student will develop an individual plan of study, with faculty approval. Course may be repeated for a maximum of 9 credit hours.

Foreign Lng-Japanese - FLJP

Courses

FLJP 1000 ELEMENTARY JAPANESE ABROAD (1-10) LEC. Learning modern Japanese listening, writing, and reading in an integrated manner.

FLJP 1010 ELEMENTARY JAPANESE I (4) LEC. 3. LAB. 2. Fundamentals of Japanese. Stress on language skills with progressive emphasis on conversation. Exposure to Japanese civilization. Fall.

FLJP 1020 ELEMENTARY JAPANESE II (4) LEC. 3. LAB. 2. Pr., FLJP 1010. Stress on language skills; structural review and composition, readings in Japanese literature and exposure to Japanese culture and civilization. Departmental approval

FLJP 2000 INTERMEDIATE JAPANESE ABROAD (1-10) AAB/LEC. Pr., FLJP 1020. Departmental approval. Continued development of proficiency in modern Japanese; focus on speaking, listening, writing, and reading within cultural contexts.

FLJP 2010 INTERMEDIATE JAPANESE I (4) LEC. 3. LAB. 2. Pr., FLJP 1020. Stress on language skills; structural review and composition, readings in Japanese literature and exposure to Japanese culture and civilization. Spring. Departmental approval.

FLJP 2020 INTERMEDIATE JAPANESE II (4) LEC. 3. LAB. 2. Pr., FLJP 2010. Continuation of FLJP 2010. Stress on language skills; structural review and composition, readings in Japanese literature and exposure to Japanese culture and civilization. Spring. Departmental approval.

FLJP 3000 ADVANCED JAPANESE ABROAD (1-10) AAB/LEC. Pr., FLJP 1020. Departmental approval. Continued development of proficiency in modern Japanese; focus on speaking, listening, writing, and reading within cultural contexts.

FLJP 3010 JAPANESE COMPOSITION AND CONVERSATION (3-6) AAB. Pr., FLJP 2010. Intensive practice of written and spoken Japanese, based on contemporary social situations and texts. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FLJP 3050 JAPANESE CINEMA (3) LEC. 3. This course introduces to students to Japanese films, with particular focus on representations of history from the 1930s to the contemporary. Course may be repeated for a maximum of 6 credit hours.

FLJP 3450 TOPICS IN JAPANESE LITERATURE AND CULTURE (3-6) AAB/LEC. Critical study of specific Japanese literary/cultural topics. Course may be repeated for a maximum of 6 credit hours.

FLJP 3930 DIRECTED STUDY IN JAPANESE (3) LEC. 3. Pr., FLJP 2020. Directed study in area of special interest for the superior student in Japanese. Course may be repeated for a maximum of 6 credit hours.

Foreign Lng-Latin - FLLN

Courses

FLLN 1010 ELEMENTARY LATIN I (4) LEC. 3. LAB. 2. For students with little or no knowledge of Latin. Knowledge and skills necessary for reading classical Latin. Fall.

FLLN 1020 ELEMENTARY LATIN II (4) LEC. 3. LAB. 2. Pr., FLLN 1010. Introduction to the knowledge and skills necessary for reading classical Latin. Fulfills College of Liberal Arts core foreign language requirement. Spring. Departmental approval.

FLLN 2010 INTERMEDIATE LATIN I (4) LEC. 3. LAB. 2. Pr., FLLN 1020. Review of classical Latin grammar with reading of selections from Latin literature. Fall. FLLN 1020 or 4 years of high school Latin or departmental approval.

FLLN 2020 INTERMEDIATE LATIN II (4) LEC. 3. LAB. 2. Pr., FLLN 2010. Continuation of FLLN 2010. Review of classical Latin grammar with reading of selections from Latin literature. Fulfills the College of Liberal Arts foreign language core requirement. Spring. Departmental approval.

FLLN 3030 READING PROFICIENCY IN LATIN (3) LEC. 3. To prepare graduate students to pass the graduate proficiency exam in Latin. Students should check with their Graduate Director for Departmental language requirements before enrolling. Departmental approval.

FLLN 3110 LATIN LITERATURE (3) LEC. 3. Pr., FLLN 2010. Advanced readings in Latin prose and poetry. Course may be repeated with change in topic. Departmental approval.

FLLN 3200 LANGUAGES ACROSS THE CURRICULUM SEMINAR IN LATIN (1) LEC. 1. Pr., FLLN 1020. Language component with readings and in-class discussions to complement a lecture course in English and in a discipline other than language. Parallel enrollment is recommended. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLLN 3510 ROMAN LITERATURE AND CULTURE IN TRANSLATION (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. Roman cultural practices and ideology with a focus on literary evidence. Readings in English. Course may be repeated for a maximum of 6 credit hours.

FLLN 3930 DIRECTED STUDIES IN LATIN LITERATURE (1-3) IND. Independent study of Latin Text(s). Topic proposed by student in conjunction with faculty advisor. Course may be repeated with change in topic. Departmental approval.

Foreign Lng-Russian - FLRU

Courses

FLRU 1010/1013 ELEMENTARY RUSSIAN I (4) LEC. 3. LAB. 2. Fundamentals of Russian. Stress on language skills, progressive emphasis on conversation. Exposure to Russian culture and civilization.

FLRU 1020/1023 ELEMENTARY RUSSIAN II (4) LEC. 3. LAB. 2. Pr., FLRU 1010 or FLRU 1013 or FLRU 1014. Fundamentals of Russian. Stress on language skills, progressive emphasis on conversation. Exposure to Russian culture and civilization. Fulfills College of Liberal Arts foreign language core requirement.

FLRU 2010 INTERMEDIATE RUSSIAN I (4) LEC. 3. LAB. 2. Pr., FLRU 1020. Stress on language skills, structural review and composition. Continued exposure to Russian civilization. Departmental approval.

FLRU 2020 INTERMEDIATE RUSSIAN II (4) LEC. 3. LAB. 2. Pr., FLRU 2010. Stress on language skills, structural review and composition. Continued exposure to Russian civilization. Departmental approval.

FLRU 2510 RUSSIAN CULTURE IN ENGLISH (3) LEC. 3. Intensive exposure to Russian culture from the 10th century to the Revolution as reflected in the fine arts and literature.

FLRU 2520 RUSSIA TODAY IN ENGLISH (3) LEC. 3. Intensive introduction to Russian culture from the Revolution to the present, as reflected in the fine arts and literature.

Foreign Lng-Spanish - FLSP

Courses

FLSP 1000 ELEMENTARY SPANISH ABROAD (1-10) AAB/FLD. Course work at the elementary level. This credit may substitute for required 1000 level courses in Spanish. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FLSP 1010/1013 ELEMENTARY SPANISH I (4) LEC. 3. LAB. 2. Basic language skills stressed with progressive emphasis on conversation. Exposure to Hispanic civilization. For students with less than 2 years of high school Spanish.

FLSP 1020/1023 ELEMENTARY SPANISH II (4) LEC. 3. LAB. 2. Pr., LSPA score of 0241 or FLSP 1010 or FLSP 1013. or FL placement test. Fundamentals of Spanish language skills stressed with progressive emphasis on conversation. Exposure to Hispanic civilization. Fulfills College of Liberal Arts foreign language core requirement.

FLSP 1030 READING PROFICIENCY IN SPANISH (3) LEC. 3. SU. Enables graduate students to read and understand scholarly material in Spanish related to their field of study. May not be used to satisfy undergraduate language requirements. Spring. Departmental approval.

FLSP 2000 INTERMEDIATE SPANISH ABROAD (1-10) AAB/FLD. Course work at the intermediate level taken on an approved study program abroad. The student should consult with the Spanish undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FLSP 2010 INTERMEDIATE SPANISH I (4) LEC. 3. LAB. 2. Pr., LSPA score of 0325 or FLSP 1020. or FL placement test. A review of grammatical structures, development of reading and writing skills, and increased understanding of Hispanic cultures. Fall, Spring. Departmental approval.

FLSP 2020 INTERMEDIATE SPANISH II (4) LEC. 3. LAB. 2. Pr., LSPA score of 0372 or FLSP 2010. or FL placement test. Continued review of grammatical structures, development of reading and writing skills, and increased understanding of Hispanic cultures. Fall, Spring.

FLSP 3000 JUNIOR ADVANCED SPANISH ABROAD (1-9) AAB/FLD. Course work at the junior/advanced level taken on an approved study program abroad. The student should consult with the Spanish undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

FLSP 3010 SPANISH PHONETICS (3) LEC. 3. Pr., LSPA score of 0428 or FLSP 2020. or FL placement test. Training in practical phonetics with an emphasis on pronunciation correctives. Fall, Spring.

FLSP 3020 SPANISH SYNTAX (3) LEC. 3. Pr., LSPA score of 0428 or FLSP 2020. or FL placement test. Sentence structure in Spanish emphasizing the interrelationship among the various parts of speech. Fall, Spring.

FLSP 3030 SPANISH CONVERSATION (3) LEC. 3. Pr., LSPA score of 0428 or FLSP 2020. or FL placement test. Intensive practice in spoken Spanish, based on texts and everyday situations, especially in contemporary Spanish society. Includes review of vocabulary.

FLSP 3040 SPANISH COMPOSITION (3) LEC. 3. Pr., LSPA score of 0428 or FLSP 2020.or FL placement test. Review of grammar and practice in writing on topics ranging from descriptions and personal opinions to current affairs and social problems.

FLSP 3100 INTRODUCTION TO HISPANIC LITERATURE (3) LEC. 3. Pr., LSPA score of 0428 or FLSP 2020.Study of literary genres, rhetorical figures, and other critical concepts. Literary analysis of Spanish and Spanish American texts. Fall, Spring.

FLSP 3110 SPANISH CIVILIZATION I (3) LEC. 3. Pr., FLSP 3020 or FLSP 3040 or LSPA score of 0428.Culture of Spain up to 1700. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish civilization. Departmental approval. Fall.

FLSP 3120 SPANISH CIVILIZATION II (3) LEC. 3. Pr., FLSP 3020 or FLSP 3040.Culture of Spain from 1700 to the present. Emphasis on geographic, historical, social, artistic, spiritual and political forces in Spanish civilization. Spring.

FLSP 3130 TOPICS IN HISPANIC FILM (3) LEC. 3. Films constitute a rich tool for understanding the culture in which they are produced. The main purpose of this course is to study film as a window into Hispanic cultures Spanish and Spanish American. Course may be repeated for a maximum of 6 credit hours.

FLSP 3140 TOPICS IN HISPANIC MUSIC (3) LEC. 3. A study of the interrelationship of Hispanic music and its cultures both Spanish and Spanish American. Course may be repeated for a maximum of 6 credit hours.

FLSP 3200 LANGUAGES ACROSS THE CURRICULUM SEMINAR IN SPANISH (1) LEC. 1. Pr., FLSP 2010.Language component with readings and in-class discussions to complement a lecture course in English and in a discipline other than language. Parallel enrollment is recommended. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLSP 3210 SPANISH-AMERICAN CIVILIZATION I (3) LEC. 3. Pr., FLSP 3020 or FLSP 3040.Intensive exposure to the culture of Spanish America from Pre-Columbian times through the Independence movement. Fall.

FLSP 3220 SPANISH-AMERICAN CIVILIZATION II (3) LEC. 3. Pr., FLSP 3020 or FLSP 3040.Intensive exposure to the culture of Spanish America from Independence to the present, as reflected in the fine arts and literature. Spring.

FLSP 3310 COMMERCIAL SPANISH TRANSLATION (3) LEC. 3. Pr., FLSP 3020 or FLSP 3040.Introduction to the techniques of English/Spanish and Spanish/English translation in a commercial environment, including correspondence, technical documents, advertising and oral translation. Fall.

FLSP 3930 DIRECTED STUDY IN SPANISH (3) IND. 3. Pr., FLSP 3000.Students will continue to develop an advanced-level of Spanish proficiency in the four language skills: listening, speaking, reading, and writing. Course may be repeated for a maximum of 6 credit hours.

FLSP 3970 SPECIAL TOPIC IN HISPANIC FILM (3) LEC. 3. The main purpose of the Topics in Hispanic Film course is to study film as a window into Hispanic cultures--both Spanish and Spanish-American. Course may be repeated for a maximum of 6 credit hours.

FLSP 4000 SENIOR ADVANCED SPANISH ABROAD (1-9) AAB/FLD. Course work at the senior/advanced level taken on an approved study program abroad. The student should consult with the Spanish undergraduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLSP 4020 CONTINUING SPANISH SYNTAX (1-3) AAB/IND. Continuing practice in Spanish syntax. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

FLSP 4030 CONTINUING SPANISH CONVERSATION (1-3) AAB. Continuing practice in Spanish conversation. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

FLSP 4040 CONTINUING SPANISH COMPOSITION (1-3) AAB/IND. Continuing practice in Spanish composition. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

FLSP 4110 MASTERPIECES OF SPANISH LITERATURE (3) LEC. 3. Pr., FLSP 3020 or FLSP 3040 or LSPA score of 0428.Major works of Spanish literature from medieval times to the present. Fall.

FLSP 4120 TOPICS IN SPANISH LITERATURE (3) LEC. 3. Pr., FLSP 3020 or FLSP 3040.Readings in Spanish literature. Spring. Course may be repeated with change in topic.

FLSP 4210 MASTERPIECES OF SPANISH-AMER LITERATURE (3) LEC. 3. Pr., FLSP 3020 or FLSP 3040.Major works of Spanish American literature from Colonial times to the present. Fall.

FLSP 4220 TOPICS IN SPANISH-AMERICAN LITERATURE (3) LEC. 3. Pr., FLSP 3020 or FLSP 3040. Readings in Spanish American Literature. Spring. Course may be repeated with a change in topic.

FLSP 4310 BUSINESS SPANISH I (3) LEC. 3. Pr., FLSP 3020 or FLSP 3040 or LSPA score of 0428. Business vocabulary and terminology, business practices and cultural influences in the Hispanic world. Fall, Spring.

FLSP 4320 BUSINESS SPANISH II (3) LEC. 3. Pr., FLSP 3020 or FLSP 3040 or LSPA score of 0428. Business vocabulary and terminology, business practices and cultural influences in the Hispanic world. Fall, Spring.

FLSP 4330 TOPICS IN BUSINESS SPANISH (3) LEC. 3. Pr., FLSP 3020 or FLSP 3040. Study of an aspect of Spanish business terminology/ documentation. Course may be repeated with change in topic.

FLSP 4420 TOPICS IN HISPANIC LITERATURE AND CULTURE (3) LEC. 3. Pr., FLSP 3020 or FLSP 3040 or LSPA score of 0428. An analysis of the cultural milieu which influences artistic creativity within a historical period. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FLSP 4510 SPANISH LITERATURE TRANSLATION (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. Major works of Spanish literature in English translation. Departmental approval.

FLSP 4520 SPANISH-AMERICAN LITERATURE IN TRANSLATION (3) LEC. 3. Pr., ENGL 1120 or ENGL 1127. Major works of Spanish American Literature in English translation. Departmental approval.

FLSP 4910 PRACTICUM IN SPANISH (1-3) AAB/PRA. Academic credit for practical work experience related to the major field. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

FLSP 4980 SENIOR CAPSTONE (1) IND. 1. SU. Assessment of language skills through written paper and oral exam. Fall, Spring.

FLSP 5010 ADVANCED SPANISH PHONETICS (3) LEC. 3. Pr., A grade of D or higher in FLSP 3000-3999. Advanced training in Spanish phonetics with specific course materials determined by needs of students. Four 3000-level Spanish courses or departmental approval.

FLSP 5020 ADVANCED SPANISH SYNTAX (3) LEC. 3. Pr., A grade of D or higher in FLSP 3000-3999. Advanced training in Spanish syntax and stylistics with specific course materials determined by needs of students. Four 3000-level Spanish courses or departmental approval.

FLSP 6010 ADVANCED SPANISH PHONETICS (3) LEC. 3. Pr., A grade of D or higher in FLSP 3000-3999. Advanced training in Spanish phonetics with specific course materials determined by needs of students. Four 3000-level Spanish courses or departmental approval.

FLSP 6020 ADVANCED SPANISH SYNTAX (3) LEC. 3. Pr., A grade of D or higher in FLSP 3000-3999. Advanced training in Spanish syntax and stylistics with specific course materials determined by needs of students. Four 3000-level Spanish courses or departmental approval.

FLSP 7000 GRADUATE SPANISH ABROAD (1-9) AAB/FLD. Course work at the graduate level taken on an approved study program abroad. The student should consult with the Spanish graduate director for an estimation of credit prior to going abroad. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FLSP 7010 HISTORY OF THE SPANISH LANGUAGE (3) LEC. 3. The diachronic study of the development of the Spanish language from its Latin origins to the present.

FLSP 7020 SPANISH LINGUISTICS (3) LEC. 3. A synchronic study of the Spanish language focusing on phonology, morphology, syntax and lexicon, taking into consideration dialectal differences.

FLSP 7030 APPLIED SPANISH LINGUISTICS (3) LEC. 3. A critical study of the current research done in applied linguistics regarding the acquisition of Spanish by non-native speakers, with emphasis on the problems faced by adult English-speaking individuals.

FLSP 7050 LITERARY CRITICISM AND THEORY (3) LEC. 3. A study of contemporary literary criticism and theory as it relates to Spanish and Spanish American Literature.

FLSP 7060 RESEARCH METHODS (1) LEC. 1. SU. An introduction to the methods of scholarly investigation in literary history and criticism. Credit may not be used to satisfy degree requirements.

FLSP 7090 INTRODUCTION TO COLLEGE LEVEL SPANISH INSTRUCTION (1) LEC. 1. SU. Instruction for graduate teaching assistants including critical observation in performance and guidance by a designated supervisory professor. Required of all students who hold a graduate teaching assistantship. Credit may not be used to satisfy degree requirements.

FLSP 7100 SPANISH MEDIEVAL LITERATURE I (3) LEC. 3. A critical and historical study of medieval Spanish literature through representative texts from the various genres of the period beginning with the origins of Spanish literature until 1299 a.d.

FLSP 7110 SPANISH MEDIEVAL LITERATURE II (3) LEC. 3. A study of medieval Spanish literature through representative texts from the various genres of the period corresponding to the years 1300-1500 A.D.

FLSP 7120 16TH CENTURY SPANISH LITERATURE (3) LEC. 3. A critical and historical study of representative literary works in all genres from around 1492 to the end of the 16th Century.

FLSP 7130 17TH CENTURY SPANISH LITERATURE (3) LEC. 3. A critical and historical study of representative literary works in all genres in the 17th Century with emphasis on Baroque literature.

FLSP 7140 SURVEY OF 18TH AND 19TH CENTURY SPANISH LITERATURE (3) LEC. 3. Survey of the major literary/cultural/historical trends present in 18th and 19th Century Spanish literature.

FLSP 7150 HISPANIC COLONIAL LITERATURE OF THE UNITED STATES (3) LEC. 3. Explores works of literature dealing with the Colonial Hispanic exploration and colonization of the United States from the 16th to 19th centuries.

FLSP 7160 20TH CENTURY SPANISH LITERATURE (3) LEC. 3. A critical and historical study of 20th-century Peninsular literature from the Generation of 98 to Spanish post-war literature through representative works in all genres.

FLSP 7170 CONTEMPORARY SPANISH LITERATURE (3) LEC. 3. A critical and historical study of contemporary literature from the Spanish Civil War to the present through representative works in all genres.

FLSP 7210 COLONIAL SPANISH-AMERICAN LITERATURE (3) LEC. 3. A study of representative literary genres and authors of Vice Regal America from Spanish transcription of Pre-Columbian works to those just prior to the Wars of Independence.

FLSP 7220 SPANISH AMERICAN POETRY I (3) LEC. 3. A critical and historical study of the development of Spanish American poetry from 1824 to the first generation of Modernism.

FLSP 7230 SPANISH AMERICAN POETRY II (3) LEC. 3. A critical and historical study of the development of Spanish American Poetry from Post-Modernism to the present.

FLSP 7240 SPANISH-AMERICAN POST-COLONIAL PROSE TEXTS TO THE NEW NARRATIVE (3) LEC. 3. A critical and historical study of representative essayists and fiction writers of the 19th and 20th centuries predating the New Narrative.

FLSP 7250 THE NEW NARRATIVE IN SPANISH-AMERICAN FICTION: MODERNIST AND POST-MODERNIST TEXTS (3) LEC. 3. A critical and historical study of major works of Modernist and Postmodernist fiction that achieved international acclaim during the second half of the 20th century.

FLSP 7270 SPANISH AMERICAN THEATER I (3) LEC. 3. A critical and historical study of the development of Spanish American Theater emphasis on the period prior to 1900.

FLSP 7280 SPANISH AMERICAN THEATER II (3) LEC. 3. A critical and historical study of the development of Spanish American theater from 1900 to present.

FLSP 7300 DON QUIJOTE (3) LEC. 3. A critical study of Cervantes' masterpiece.

FLSP 7970/7976 SPECIAL TOPICS IN LINGUISTICS, LITERATURE AND CULTURE (3) AAB/SEM. 3. An in-depth study of a movement of authors an analysis of the cultural milieu which influences creativity or an investigation of a specific linguistic phenomenon in Spanish. Course may be repeated with a change in topic. BA in Spanish or BS in Foreign Language Education in Spanish. Course may be repeated with change in topics.

FLSP 7990 RESEARCH AND THESIS (1-10) MST. Directed readings and research culminating in a thesis. Course may be repeated with change in topic.

Forest Engineering - FOEN

Courses

FOEN 3000 INTRODUCTION TO FORESTRY OPERATIONS (2) LEC. 1. LAB. 3. Introduction to basic field operations in Forestry including site preparation and planting, harvesting and primary manufacturing processes. Summer.

FOEN 3040 FOREST SURVEYING (3) LEC. 1. LAB. 8. Basic land surveying concepts and procedures as applied to Forestry. Use of basic surveying instruments and calculations for land areas, boundaries, and topographic features. Summer.

FOEN 4730 APPLICATION OF TIMBER HARVESTING TECHNIQUES (2) LEC. 1. LAB. 3. Pr., FOEN 5700. Business considerations including safety, regulations, contracts, deeds and cost accounting and analysis combined with equipment operation and maintenance. Fall.

FOEN 4930 DIRECTED STUDIES (1-3) IND. Faculty supervision of individual student investigations of specialized problems in forest engineering. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FOEN 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. Topics of an undergraduate nature pertinent to Forest Engineering. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

FOEN 4970 SPECIAL TOPICS (1-4) LEC. Individual or small group study of a specialized area in forest engineering. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

FOEN 4997 HONORS THESIS (1-6) IND. Pr., Honors College. Directed research and Honors Thesis. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FOEN 5230 ENGINEERED WOOD STRUCTURE DESIGN (3) LEC. 2. LAB. 3. Pr., ENGR 2070. Load, deflection criteria; engineering characteristics of wood; designing wood components and mechanical connections; shear walls and diaphragms; trusses; bridges; post-frame construction. Fall.

FOEN 5700 HARVESTING (3) LEC. 2. LAB. 3. Pr., FORY 3180. Analysis of the administration of timber harvest, equipment choice, planning methods, movement of timber products, machine and system costs, balancing of harvesting systems, logging safety, and environmental impact. Spring.

FOEN 5710 TIMBER HARVESTING ANALYSIS METHODS (3) LEC. 2. LAB. 3. Pr., FOEN 3000. Analysis methods for timber harvesting productivity and costs including gathering of time and production data, preparation of data for analysis and statistical modeling. Spring.

FOEN 6230 ENGINEERED WOOD STRUCTURE DESIGN (3) LEC. 2. LAB. 3. Pr., ENGR 2070. Load, deflection criteria; engineering characteristics of wood; designing wood components and mechanical connections; shear walls and diaphragms; trusses; bridges; post-frame construction. Fall.

FOEN 6700 HARVESTING (3) LEC. 2. LAB. 3. Pr., FORY 3180. Analysis of the administration of timber harvest, equipment choice, planning methods, movement of timber products, machine and system costs, balancing of harvesting systems, logging safety, and environmental impact. Spring.

FOEN 6710 TIMBER HARVESTING ANALYSIS METHODS (3) LEC. 2. LAB. 3. Pr., FOEN 3000. Analysis methods for timber harvesting productivity and costs including gathering of time and production data, preparation of data for analysis and statistical modeling. Spring.

FOEN 7930 DIRECTED STUDIES (1-3) IND. Faculty supervision of individual student investigations of advanced specialized problems in forest engineering. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FOEN 7970 SPECIAL TOPICS (1-4) LEC. Individual or small group study of an advanced specialized area in forest engineering. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

Forest Products - FOPR

Courses

FOPR 3390 INTRODUCTION TO WOOD SCIENCE AND FOREST PRODUCTS (3) LEC. 2. LAB. 3. Pr., FORY 3020. The basic properties of wood and their impact on the manufacture of forest products. Identification of important products and woods. Fall.

FOPR 4930 DIRECTED STUDY (1-3) IND. Study of timely topics in forest products on an as needed or as available basis. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FOPR 5050 BIOMASS PROCESSING CHEMISTRY AND BIOENERGY (3) LEC. 3. Pr., CHEM 2070. Wood and fiber morphology, cellulose, hemicellulose and lignin chemistry; biodegradations of cellulose, hemicellulose and lignin. Emphasis on bioenergy and bio-products. Departmental approval.

FOPR 5250 BIOCOMPOSITES (3) LEC. 3. Pr., FOPR 3390. Relationships between various biomass feedstock properties and the physical, chemical, and mechanical properties of the biocomposite from various manufacturing processes. Departmental approval.

FOPR 5350 FOREST PRODUCTS PRODUCTION AND OPERATIONS MANAGEMENT (3) LEC. 3. Pr., FOPR 3390. Production and operations management concepts, principles and techniques applied to wood products manufacturing. Problem situation analyses with emphasis on economic decision making. Fall.

FOPR 6050 BIOMASS PROCESSING CHEMISTRY AND BIOENERGY (3) LEC. 3. Wood and fiber morphology, cellulose, hemicellulose and lignin chemistry; biodegradations of cellulose, hemicellulose and lignin. Emphasis on bioenergy and bio-products. Departmental approval.

FOPR 6250 BIOCOMPOSITES (3) LEC. 3. Pr., FOPR 3390. Relationships between various biomass feedstock properties and the physical, chemical, and mechanical properties of the biocomposite from various manufacturing processes. Departmental approval.

FOPR 6350 FOREST PRODUCTS PRODUCTION AND OPERATIONS MANAGEMENT (3) LEC. 3. Pr., FOPR 3390. Production and operations management concepts, principles and techniques applied to wood products manufacturing. Problem situation analyses with emphasis on economic decision making. Fall.

FOPR 7030 PHYSICS OF WOOD AND WOOD COMPOSITES (3) LEC. 3. Hygrothermophysics, dimensional stability, acoustics, piezoelectric properties and defectoscopy of wood and its composites. Fall. Departmental approval.

FOPR 7040 MECHANICS OF WOOD AND WOOD COMPOSITES (3) LEC. 3. Micro- and macro-mechanical behavior of wood and its composites. Mechanical behavior of glue joints. Modeling engineering performance of wood and its composites. Fall. Departmental approval.

FOPR 7060 ADVANCED FOREST PRODUCTS PRODUCTION AND OPERATIONS MANAGEMENT (3) LEC. 3. Pr., FOPR 5350 or FOPR 6350. Analysis of production/operations management problem situations in wood products manufacturing through systems approach and quantitative modeling techniques. Spring.

FOPR 7930 DIRECTED STUDIES (1-3) IND. Study of timely topics in forest products on an as needed or as available basis. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FOPR 7970 SPECIAL TOPICS (1-4) IND. Analysis of a problem in forest products or wood science involving library research, laboratory or field work and a report on the findings. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

FOPR 7990 RESEARCH AND THESIS (1-15) MST. Credit to be arranged. Course may be repeated with change in topics.

FOPR 8930 DIRECTED STUDIES (1-3) IND. Study of timely topics in forest products on an as needed or as available basis. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FOPR 8970 SPECIAL TOPICS (1-4) IND. Analysis of a problem in forest products or wood science involving library research, laboratory or field work and a report on the findings. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

FOPR 8990 RESEARCH AND DISSERTATION (1-15) DSR. Credit to be arranged. Course may be repeated with change in topics.

Forestry & Wildlife Sci. - FOWS

Courses

FOWS 1010 INTRODUCTION TO RENEWABLE NATURAL RESOURCES (1) LEC. 1. Introduction to the wealth and breadth of renewable natural resources in the state, region, nation, and world. Speakers cover topics in forestry, wildlife, water, and soil. Fall, Spring.

FOWS 2010 ENVIRONMENTAL INTERPRETATION (3) LEC. 3. Communication theory as management and public relations tool for natural resource management. Fall.

FOWS 2020 NATURAL RESOURCES SAMPLING TECHNIQUES (3) LAB. 3. Sampling methods and analytical methods relevant to the evaluation of the environment. Topics include sampling methods, quality assurance procedures, and data management.

FOWS 3015 INTERNATIONAL ISSUES IN NATURAL RESOURCE MANAGEMENT (3) FLD. 3. Examination of contemporary natural and cultural resource management practices and conservation programs through national and international program placements. Spring, Summer and Fall.

FOWS 3025 INTERNATIONAL ISSUES IN COMMUNITY DEVELOPMENT (3) FLD. 3. Examination of contemporary natural and cultural resource management practices and conservation programs through national and international program placements. Spring, Summer and Fall.

FOWS 4310 ECOTOURISM (3) LEC. 3. Principles, business considerations, and issues surrounding ecotourism, with emphasis on critique and connections to other industries. Spring.

FOWS 4980 UNDERGRADUATE RESEARCH (1-4) IND. Directed research in the area of specialty under faculty supervision. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

FOWS 5050 URBAN ECOLOGY (3) LEC. 3. Examination of urban ecosystems and the influence of urbanization on rural and forested lands. Junior standing. Fall. May count either FOWS 5050 or FOWS 6050.

FOWS 5140 WATERSHED SERVICES (2) LEC. 2. This class examines the livelihoods and ecological impacts of Costa Rica's program of payments for watershed services. Travel required. Senior. Fall. May count either FOWS 5140 or FOWS 6140.

FOWS 5220 LANDSCAPE ECOLOGY (3) LEC. 3. Pr., BIOL 3060 or FORY 4230. Ecological effects and management of heterogeneous spatial pattern on ecosystems over large areas. May count either FOWS 5220 or FOWS 6220.

FOWS 5270 NATURAL RESOURCE POLICY (3) LEC. 3. Departmental approval. Examination of attitudes, philosophies and policies that govern management of the natural resource. Spring.

FOWS 5320 ENVIRONMENTAL SERVICES (3) LEC. 3. Environmental services provided by ecosystems, with emphasis on human well-being and livelihood, and emerging market mechanisms. Spring.

FOWS 5880 ECOLOGICAL ECONOMICS (3) LEC. 3. Foundations, principles and empirical application of ecological economics to address current social and economic issues. Spring.

FOWS 6050 URBAN ECOLOGY (3) LEC. 3. Examination of urban ecosystems and the influence of urbanization on rural and forested lands. May count either FOWS 5050 or FOWS 6050.

FOWS 6140 WATERSHED SERVICES (2) LEC. 2. This class examines the livelihoods and ecological impacts of Costa Rica's program of payments for watershed services. Travel required. Graduate Standing. Fall. May count either FOWS 5140 or FOWS 6140.

FOWS 6220 LANDSCAPE ECOLOGY (3) LEC. 3. Pr., BIOL 3060 or FORY 4230. Ecological effects and management of heterogeneous spatial pattern on ecosystems over large areas. May count either FOWS 5220 or FOWS 6220.

FOWS 6270 NATURAL RESOURCE POLICY (3) LEC. 3. Departmental approval. Examination of attitudes, philosophies and policies that govern management of the natural resource.

FOWS 6320 ENVIRONMENTAL SERVICES (3) LEC. 3. Environmental services provided by ecosystems, with emphasis on human well-being and livelihood, and emerging market mechanisms. Spring.

FOWS 6880 ECOLOGICAL ECONOMICS (3) LEC. 3. Foundations, principles and empirical application of ecological economics to address current social and economic issues. Spring.

FOWS 7950 GRADUATE SEMINAR (1) SEM. 1. SU. Students develop ability and confidence in making oral presentations based upon research and provide constructive criticism of their peers' presentations.

Forestry - FORY

Courses

FORY 3020 FOREST BIOLOGY (2) LEC. 1. LAB. 3. Introduction to biological and ecological principles as trees in forest management; identification of major tree species. Summer.

FORY 3050 FIELD MENSURATION (3) LEC. 1. LAB. 8. Basic concepts and procedures for measuring trees, stands and other forest resources; units of measure, log rules, volume tables, condition class mapping and timber estimation. Summer.

FORY 3060 INTRODUCTION TO FOREST MANAGEMENT STRATEGIES (2) LEC. 1. LAB. 3. Biological, social, and economic principles underlying forest management strategies, the diversity of forestry enterprises, and the complexities facing forest managers. Summer.

FORY 3100 DENDROLOGY (3) LEC. 2. LAB. 3. Pr., BIOL 1030.or higher. Taxonomy and identification of important forest trees of the U.S., including cover types of forest regions. Fall.

FORY 3180 FOREST MEASUREMENTS I (3) LEC. 2. LAB. 3. Pr., FORY 3050.Theoretical and empirical estimates of tree and log volumes, tree taper, and yield tables. Sampling design and analysis to estimate current conditions of timber stands.

FORY 3200 FOREST TREE PHYSIOLOGY (3) LEC. 3. Pr., FORY 3020.Relationship between cultural, environmental and genetic factors that affect metabolism and growth of individual trees. Fall.

FORY 3500 FORESTRY FOR SMALL WOODLAND OWNERS (3) LEC. 3. An appreciation of forest trees and the environment, the environmental functions of trees, and the economic potential of a balanced land-use plan. Spring.

FORY 3640 TAXATION OF TIMBER AND OTHER NATURAL RESOURCES (2) LEC. 2. Income taxation of natural resources, including passive loss rules, depletion and capital gains, and an introduction to taxation of businesses. Fall.

FORY 4190 FOREST MEASUREMENTS II (3) LEC. 2. LAB. 3. Pr., FORY 3180.Factors affecting and mathematical principles of tree-volume and stand growth. Spring.

FORY 4230 FOREST ECOLOGY (3) LEC. 3. Pr., BIOL 1030.Forests as functional systems, the biotic and abiotic environment, temporal changes in ecosystem structure and function, application of ecological information. Spring.

FORY 4440 FOREST FIRE MANAGEMENT (3) LEC. 1. LAB. 6. Pr., FORY 4230 or BIOL 3060.The management of fire, both as a tool and wildfire suppression in the management of forested ecosystems. Emphasis placed on experience, technique and administration. Spring.

FORY 4500 NATURAL RESOURCES LAW AND ECONOMICS (3) LEC. 3. Pr., ECON 2020.Economic causes, rationale, and consequences of natural resources. Summer.

FORY 4820 FORESTRY IN THE PRIVATE SECTOR (2) SEM. 4. Pr., FORY 5410.Management systems and practices used in wood purchasing, timber harvesting and timberland management including public relations, forest sustainability, certification and personal business skills. Spring.

FORY 4830 INDUSTRIAL WOOD PROCUREMENT PRACTICUM (1) PRA. 2. SU. Pr., FORY 3050.Strategies, field and office procedures involved in purchasing wood for an industrial forestry firm. Taught as a weekend field exercise at Solon Dixon Forest Education Center. Course may be repeated for a maximum of 2 credit hours.

FORY 4930 DIRECTED STUDY (1-3) AAB/IND. Fall, Spring, and Summer. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FORY 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College.Topics of an undergraduate nature pertinent to Forestry. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

FORY 4970 SPECIAL TOPICS (1-4) AAB/LEC. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

FOR Y 4980 SENIOR CAPSTONE PROJECT (4) LEC. 4. Pr., FOR Y 5230 and FOR Y 5410. Integrated study of Forest Resource Management using a case-study approach through development of a comprehensive plan related to the declared emphasis. Spring.

FOR Y 4990 SCHOLARS PROJECT (1-3) IND. A problem in the student's area of interest. To promote independent work, library research, field work, data analysis or other tasks. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

FOR Y 4997 HONORS THESIS (1-6) IND. Pr., Honors College. Directed research and writing of honors thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FOR Y 5140 FOREST REGENERATION AND SEEDLING PRODUCTION (3) LEC. 3. Pr., P/C, FOR Y 4230 or P/C, HORT 3220. Principles of forest nursery seedling culture. Evaluation of activities to improve out planting performance. Plantation establishment problems and practices in Southern US. Spring.

FOR Y 5150 FOREST HEALTH (3) LEC. 3. Pr., FOR Y 3020 or BIOL 3060. Importance, taxonomy, identification and integrated pest management strategies of principle disease, insect and abiotic disorders of forest and shade trees from seedlings to maturity and forest products. Fall.

FOR Y 5151 FOREST HEALTH LABORATORY (1) LAB. 1. Coreq., FOR Y 5150. Identification of basic diseases and insects that affect forest health along with identification of their damage; the processes of pathogen infection and symptomology; and the process of wood decay studied in a laboratory and field environment. Credit will not be given for both FOR Y 5151 and FOR Y 6151. Fall.

FOR Y 5230 SILVICULTURE (4) LEC. 3. LAB. 3. Pr., FOR Y 4230 or BIOL 5140 or BIOL 3060 or BSEN 3230. Principles and methods of controlling establishment, growth and quality of forest stands. Application of ecological principles to manipulation of forest ecosystems to meet specific objectives. Fall.

FOR Y 5240 FOREST WATERSHED MANAGEMENT (3) LEC. 3. Pr., BIOL 1030. Introduction to watersheds, effects of land management on erosion and water quality, and mitigation techniques to reduce adverse effects. Spring.

FOR Y 5250 WETLAND ECOLOGY AND MANAGEMENT (3) LEC. 3. Pr., BIOL 3060 or FOR Y 4230. Wetland ecology in the southeastern U.S. with emphasis on soils, hydrology, biology, and policies and practices related to agriculture, forestry, wildlife. Spring.

FOR Y 5310 ENVIRONMENTAL ETHICS (3) LEC. 3. Critical examination of environmental ethics: historical development and various ethical perspectives. Examination of current environmental issues using perspectives covered in course. Fall.

FOR Y 5400 FOREST ECONOMICS (3) LEC. 2. LAB. 3. Pr., FOR Y 3180. Marginal analysis, investment theory, resource supply, economics of conservation, and taxation principles applied to forestry. Structure and performance of forest products markets. Spring.

FOR Y 5410 FOREST MANAGEMENT AND ADMINISTRATION (3) LEC. 2. LAB. 3. Pr., FOR Y 5400 and FOR Y 4190. Quantitative approaches to decision making in Forestry with an emphasis on the interests of large scale firms and agencies. Fall.

FOR Y 5420 FOREST POLICY (3) LEC. 3. Pr., FOR Y 5400. History and current situations regarding both public and private sector aspects of forest policies, and the effects of political, economic, legal, and social dynamics. Spring.

FOR Y 5440 INTERNATIONAL FORESTRY (3) LEC. 3. Survey global forest location, characteristics, management systems, international forest products trade, current issues, and international forest governance.

FOR Y 5450 FOREST SECTOR ECONOMICS (3) LEC. 3. Pr., FOR Y 5400. Status, trend, employment and other fundamentals of forest industry. Timber supply and demand, forest products supply and demand, technological change, international trade. Spring.

FOR Y 5470 GIS APPLICATIONS IN NATURAL RESOURCES (2) LEC. 1. LAB. 3. Basic understanding of GIS through discussion of the basic components of a GIS and how GIS are used in forestry applications.

FOR Y 5480 GIS DATABASE DESIGN AND ANALYSIS (2) LEC. 2. Geographic information system database planning, design, creation, management and analysis using a project oriented approach. Spring. Departmental approval.

FOR Y 5520 CHOICE OF BUSINESS ENTITY (3) LEC. 3. Characteristics of business entities and the criteria to choose between sole proprietorships, partnerships, limited liability companies and corporations. May count either FOR Y 5520 or FOR Y 6520.

FOR Y 5530 ESTATE PLANNING (3) LEC. 3. Probate process; disposition of assets; wills and trusts; the transfer tax system; and strategies to minimize the taxable estate. May count either FOR Y 5530 or 6530.

FOR Y 5540 ENVIRONMENTAL LAW (3) LEC. 3. A review of environmental law including common and administrative law, land use, and Federal statutes on water, air, toxins and waste. May count either FOR Y 5540 or FOR Y 6540.

FOR Y 5550 PROPERTY LAW (3) LEC. 3. Land ownership, transfer and management including trespass, nuisance, adverse possession, easements, concurrent ownership, land use regulations and regulatory takings. May count either FOR Y 4550 or FOR Y 5550/6550.

FOR Y 5650 URBAN FORESTRY (3) LEC. 2. LAB. 3. Pr., FOR Y 3100 or HORT 3220. Principles and concepts of tree establishment, management and health in an urban environment. Case studies of urban forestry programs are presented. Spring.

FOR Y 6140 FOREST REGENERATION AND SEEDLING PRODUCTION (3) LEC. 3. Pr., P/C, FOR Y 4230 or P/C, HORT 3220. Principles of forest nursery seedling culture. Evaluation of activities to improve out planting performance. Plantation establishment problems and practices in Southern US. Spring.

FOR Y 6150 FOREST HEALTH (3) LEC. 3. Pr., FOR Y 3020 or BIOL 3060. Importance, taxonomy, identification and integrated pest management strategies of principle disease, insect and abiotic disorders of forest and shade trees from seedlings to maturity and forest products. Fall.

FOR Y 6151 FOREST HEALTH LABORATORY (1) LAB. 1. Coreq., FOR Y 6150. Identification of basic diseases and insects that affect forest health along with identification of their damage; the processes of pathogen infection and symptomology; and the process of wood decay studied in a laboratory and field environment. Credit will not be given for both FOR Y 5151 and FOR Y 6151.

FOR Y 6220 LANDSCAPE ECOLOGY (3) LEC. 3. Pr., BIOL 3060 and FOR Y 4230. Ecological effects and management of heterogeneous spatial pattern on ecosystems over large areas.

FOR Y 6230 SILVICULTURE (4) LEC. 3. LAB. 3. Pr., FOR Y 4230 or BIOL 3060 or BIOL 5140 or BIOL 6140 or BSEN 3230. Principles and methods of controlling establishment, growth and quality of forest stands. Application of ecological principles to manipulation of forest ecosystems to meet specific objectives. Fall.

FOR Y 6240 FOREST WATERSHED MANAGEMENT (3) LEC. 3. Pr., BIOL 1030. Introduction to watersheds, effects of land management on erosion and water quality, and mitigation techniques to reduce adverse effects. Spring.

FOR Y 6250 WETLAND ECOLOGY AND MANAGEMENT (3) LEC. 3. Pr., BIOL 3060. Wetland ecology in the southeastern U.S. with emphasis on soils, hydrology, biology, and policies and practices related to agriculture, forestry, wildlife. Spring.

FOR Y 6310 ENVIRONMENTAL ETHICS (3) LEC. 3. Critical examination of environmental ethics. Historical development and various ethical perspectives. Examination of current environmental issues using perspectives covered in course. Fall.

FOR Y 6400 FOREST ECONOMICS (3) LEC. 2. LAB. 3. Pr., FOR Y 3180. Marginal analysis, investment theory, resource supply, economics of conservation, and taxation principles applied to forestry. Structure and performance of forest products markets. Spring.

FOR Y 6410 FOREST MANAGEMENT AND ADMINISTRATION (3) LEC. 2. LAB. 3. Pr., (FOR Y 5400 or FOR Y 6400) and FOR Y 4190. Quantitative approaches to decision making in Forestry with an emphasis on the interests of large scale firms and agencies. Fall.

FOR Y 6420 FOREST POLICY (3) LEC. 3. Pr., FOR Y 5400 or FOR Y 6400. History and current situations regarding both public and private sector aspects of forest policies, and the effects of political, economic, legal and social dynamics. Spring.

FOR Y 6440 INTERNATIONAL FORESTRY (3) LEC. 30. Survey global forest location, characteristics, management systems, international forest products trade, current issues, and international forest governance.

FOR Y 6450 FOREST SECTOR ECONOMICS (4) LEC. 4. Pr., FOR Y 5400 or FOR Y 6400. Fundamentals of forest industry, timber supply and demand, forest products supply and demand, technological change, international trade and development, sophisticated forest sector modeling. Spring.

FOR Y 6470 GIS APPLICATIONS IN NATURAL RESOURCES (2) LEC. 1. LAB. 3. Basic understanding of GIS through discussions of the components of a GIS and how GIS are used in natural resource applications.

FOR Y 6480 GIS DATABASE DESIGN AND ANALYSIS (2) LEC. 2. Geographic information system database planning, design, creation, management and analysis using a project oriented approach. Spring. Departmental approval.

FOR Y 6520 CHOICE OF BUSINESS ENTITY (3) LEC. 3. Characteristics of business entities and the criteria to choose between sole proprietorships, partnerships, limited liability companies and corporations. May count either FOR Y 5520 or FOR Y 6520.

FOR 6530 ESTATE PLANNING (3) LEC. 3. Probate process; disposition of assets; wills and trusts; the transfer tax system; and strategies to minimize the taxable estate. May count either FOR 5530 or FOR 6530.

FOR 6540 ENVIRONMENTAL LAW (3) LEC. 3. A review of environmental law including common and administrative law, land use, and Federal statutes on water, air, toxins and wastes. May count either FOR 5540 or FOR 6540.

FOR 6550 PROPERTY LAW (3) LEC. 3. Land ownership, transfer and management including trespass, nuisance, adverse possession, easements, concurrent ownership, land use regulations and regulatory takings. May count either FOR 4550 or FOR 5550/6550.

FOR 6650 URBAN FORESTRY (3) LEC. 2. LAB. 3. Pr., FOR 3100 or HORT 3220. Principles and concepts of tree establishment, management and health in an urban environment. Case studies of urban forestry programs are presented. Spring.

FOR 7110 FOREST BIOGEOCHEMISTRY (3) LEC. 2. LAB. 3. Pr., FOR 6230. Fundamental and applied aspects of forest biogeochemical processes at scales of the individual tree, forest community, and forest ecosystem.

FOR 7160 ECOSYSTEM RESPONSES TO CHEMICAL CLIMATE CHANGE (3) LEC. 2. LAB. 3. Pr., FOR 4230 and FOR 3200. Plant responses to changes in the chemical climate. Emphasis on sources, effects, methodologies used and ecosystem and global effects. Even years.

FOR 7170 ECOPHYSIOLOGY OF FOREST TREES (3) LEC. 3. Pr., BIOL 3100 or FOR 3200. Interactions among the environment, silvicultural practices, physiological mechanisms and tree growth. Integration of root, shoot and foliar functions and leaf, tree and stand level processes. Spring odd years.

FOR 7210 ECOSYSTEM ECOLOGY (3) LEC. 3. Pr., BIOL 3060 or FOR 4230 or BIOL 5140 or BIOL 6140. To create a conceptual model of the terrestrial ecosystem including spatial distributions over time; and the impact of human activity and natural disturbance. Spring.

FOR 7250 ADVANCED ECOSYSTEM MODELING (3) LEC. 3. Pr., FOR 4230 or BIOL 3060. Exploration of the theory and rationale in modeling the structure and functions of ecological ecosystems.

FOR 7330 ECOLOGY AND SILVICULTURE OF EASTERN HARDWOOD FORESTS (3) LEC. 2. LAB. 3. Pr., FOR 4230. Silvical characteristics of major hardwood species and community composition, dynamics, site relationships, and silviculture of Southern and Eastern deciduous forests, emphasizing oaks. Fall odd years.

FOR 7440 FOREST FINANCE AND INVESTMENT (3) LEC. 3. Principles of corporate and real estate finance as applied to commercial timberland and the place of this asset class in individual and institutional portfolios. Spring. Departmental approval.

FOR 7460 ADVANCED FOREST ECONOMICS (3) LEC. 3. Evolution of the role of economics in forestry, policy and production analysis methods, non-market valuation, and regional analysis. Spring.

FOR 7480 ADVANCED FOREST POLICY (3) LEC. 3. Pr., FOR 5400 or FOR 6400. Policy process and players, theory and evolution of property rights, public choice theory, land ethics, policy analysis, programs and statutory laws, forest policy in an international context. Spring odd years.

FOR 7510 RESEARCH METHODS (2) LEC. 1. LAB. 3. Overview of the scientific method and its application in forestry/natural resources research. Evaluation and preparation of project proposals with emphasis on research quality and written communication skills. Fall.

FOR 7550 ADV STUDIES FOREST HYDROLOGY (3) LEC. 3. In depth focus on components of the hydrologic cycle in forested landscapes and how changes in the landscape and management practices impact the hydrologic regime in the watershed. Spring. Departmental approval.

FOR 7580 NATURAL RESOURCE POLICY ANALYSIS AND ADMINISTRATION (3) LEC. 3. The policy-making process, the history of natural resource and environmental policy, and applied techniques in policy analysis. Summer.

FOR 7850 URBAN FORESTRY SEMINAR (1) SEM. 1. Presentation and discussion of research, scientific papers and issues related to urban forest establishment, care and planning. Credit will not be given for both FOR 7850 and HORT 7850. Fall.

FOR 7910 PRACTICUM IN COLLEGE TEACHING (1) PRA. 1. SU. Techniques and practice of collegiate teaching at the level of Graduate Assistant. Students work under direct supervision and tutelage of the instructor. Fall, Spring, and Summer.

FOR 7930 DIRECTED STUDIES (1-3) AAB/IND. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FOR 7970 SPECIAL TOPICS (1-4) IND. Analysis of a problem in Forestry or wood utilization involving library research, laboratory or field work and a report on the findings. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

FOR 7980 MASTER OF NATURAL RESOURCES PAPER (2) IND. In-depth study involving library review, data collection and/or data analysis. Departmental Program.

FOR 7990 RESEARCH AND THESIS (1-15) MST. Credit to be arranged.

FOR 8930 DIRECTED STUDIES (1-3) IND. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

FOR 8970 SPECIAL TOPICS (1-4) IND. Analysis of a problem in Forestry or wood utilization involving library research, laboratory or field work and report on the findings. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

FOR 8990 RESEARCH AND DISSERTATION (1-15) DSR. Credit to be arranged.

Foundations Of Educ - FOUN

Courses

FOUN 3000 DIVERSITY OF LEARNERS AND SETTINGS (3) LEC. 2. LAB. 3. Pr., 2.00 GPA. Exploration of socio-cultural factors and individual differences; understanding diversity and communication with students with different cultural backgrounds, abilities, and values; combines class-based as well as community-based discovery learning, known as service learning, that links theory and practice and involves students in active participation in a local agency or service center.

FOUN 3100 CHILD DEVELOPMENT, LEARNING, MOTIVATION AND ASSESSMENT (6) LEC. 5. LAB. 3. Pr., EDUC 3000 or (FOUN 3000 and RSED 3000). Admission to Teacher Education. Cognitive, psychosocial, and moral aspects of child development; integration of development, learning, motivation, assessment, and evaluation in context of instructional planning.

FOUN 3110 ADOLESCENT DEVELOPMENT, LEARNING, MOTIVATION AND ASSESSMENT I (3) LEC. 2. LAB. 3. Pr., EDUC 3000 or (FOUN 3000 and RSED 3000). Admission to Teacher Education. An integrated approach to the effective instruction of the adolescent learner in context.

FOUN 3120 ADOLESCENT DEVELOPMENT, LEARNING, MOTIVATION AND ASSESSMENT II (3) LEC. 3. Pr., FOUN 3110 and EDUC 3000 or (FOUN 3000 and RSED 3000). Admission to Teacher Education. Study of the adolescent development, learning, motivation, evaluation, and assessment concepts central to effective instruction.

FOUN 7000/7006 CULTURAL FOUNDATIONS OF EDUCATION (3) LEC. 3. Advanced study of culture and its impact on the development and structure of education and schooling. Utilizing historical, philosophical, anthropological, and sociological perspectives, contemporary issues regarding the nature and practice of schooling will be examined. May count either FOUN 7000 or FOUN 7006.

FOUN 7010/7016 HISTORY OF AMERICAN EDUCATION (3) LEC. 3. Examination of ideas, actors, and events which influenced the emergence of the formal school system, beginning with early American forms of education. May count either FOUN 7010 or FOUN 7016.

FOUN 7020/7026 SOCIAL AND CULTURAL DIVERSITY IN AMERICAN EDUCATION (3) LEC. 3. Advanced study of education's response to cultural pluralism. The impact of religious, ethnic, social, and racial diversity on the structure of the American public school will be examined. May count either FOUN 7020 or FOUN 7026.

FOUN 7030/7036 MODERNITY, PHILOSOPHY AND THE CURRICULUM (3) LEC. 3. Advanced study of the philosophical assumptions of curriculum development within the context of modernity. May count either FOUN 7030 or FOUN 7036.

FOUN 7040 PHILOSOPHY AND EDUCATIONAL RESEARCH (3) LEC. 3. Advanced philosophical study of educational research within the context of education's professional culture.

FOUN 7900 DIRECTED STUDIES (1-6) IND. SU. Special study in which the student's learning efforts are guided toward desired objectives. Course may be repeated for a maximum of 6 credit hours.

FOUN 7930 TEACHING APPRENTICESHIP (3) IND. 3. A structured opportunity for students to explore social foundations of education concepts and pedagogies in the college classroom. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

FOUN 7970 SPECIAL TOPICS IN FOUNDATIONS OF EDUCATION (3-6) LEC. Consideration of historical, philosophical, social, psychological, measurement, statistics or research issues, and their impact on education. Course may be repeated for a maximum of 6 credit hours.

FOUN 8010 MODERN EDUCATION AND COMPARATIVE PERSPECTIVES (3) LEC. 3. Advanced comparative study of selected contemporary educational issues within the American and international urban context.

FOUN 8990 RESEARCH AND DISSERTATION (1-10) DSR. Individualized support and direction for students writing their dissertations. Courses may be repeated for a maximum for 10 hours. Course may be repeated with change in topics.

Geography - GEOG

Courses

GEOG 1010/1013/1014 GLOBAL GEOGRAPHY (3) LEC. 3. Social Science I Core. Spatial and locational context for analyzing change in the contemporary world, including elements of both physical and cultural environments.

GEOG 1017 HONORS GLOBAL GEOGRAPHY (3) LEC. 3. Pr., Honors College. Spatial and locational context for analyzing change in the contemporary world, including elements of both physical and cultural environments.

GEOG 2010 CULTURAL GEOGRAPHY (3) LEC. 3. Spatial perspectives on cultural society and geography's approach to solving problems using case studies and key issues.

GEOG 2020 PHYSICAL GEOGRAPHY (3) LEC. 3. Selected elements of the earth's physical system to include such items as landforms, basic weather elements, soils and vegetation.

GEOG 2800 GEOGRAPHIC METHODS AND TECHNIQUES (4) LEC. 3. LAB. 2. Pr., COMP 1000. Key geographical concepts and production of basic geographical tools for portraying spatial data through laboratory exercises. Departmental approval.

GEOG 2850 MAP READING AND ANALYSIS (3) LEC. 2. LAB. 2. Introduction to basic concepts and techniques used to interpret map symbols and to analyze geographic patterns.

GEOG 3110 UNITED STATES AND CANADA (3) LEC. 3. Survey of the region incorporating physical and cultural elements, providing a synthesis of the economic and political processes of the U.S. and Canada.

GEOG 3120 ALABAMA AND THE SOUTHEAST (3) LEC. 3. Study of the physical and cultural environments of the state.

GEOG 3130 LATIN AMERICA (3) LEC. 3. Survey of physical and human landscape of the region including historical geography, natural resources, economic development and problems and prospects affecting major countries.

GEOG 3140 AFRICA (3) LEC. 3. Analysis of the relationships among diverse population groups and the physical environments of sub-Saharan Africa.

GEOG 3150 EUROPE (3) LEC. 3. Survey of physical and human landscape of the region including historical geography, natural resources, economic development, and problems and prospects affecting several of the major countries.

GEOG 3160 ASIA (3) LEC. 3. Survey of the physical and cultural landscape of Asia, including its development and spatial distribution of resources, with a focus on major countries.

GEOG 3300 INTERNATIONAL TRAVEL AND TOURISM (3) LEC. 3. Environmental and cultural patterns that characterize places attractive to tourists. Provides realistic situations for developing travel plans and programs.

GEOG 3810 CARTOGRAPHY AND GRAPHICS (4) LEC. 3. LAB. 2. Pr., GEOG 2800. Techniques of map production including relevant computer graphics applications and related laboratory exercises. Departmental approval.

GEOG 4920 INTERNSHIP (3) LEC. 3. Opportunity to apply classroom experience to real job setting. Course may be repeated for a maximum of 6 credit hours.

GEOG 4930 DIRECTED STUDIES (1-4) IND. Conferences, reading, research and/or reports may fulfill course requirement. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

GEOG 5010 URBAN GEOGRAPHY (3) LEC. 3. Analysis of urban patterns and the processes creating them. Departmental approval.

GEOG 5210 CLIMATOLOGY (3) LEC. 3. The atmosphere and global circulation, El Nino, regional patterns, paleoclimate reconstruction, climate change, climate influences on health and human activities, data sources and statistical analysis, and GIS applications. Departmental approval.

GEOG 5220 GEOMORPHOLOGY (3) LEC. 3. Basic concepts, terms, and techniques used to identify landforms and their evolutionary processes. Credit will not be given for both GEOG 5220 and GEOG 6220.

GEOG 5300 ADVANCED REGIONAL STUDIES IN GEOGRAPHY (3) LEC. 3. Spatial patterns of socio-economic development of Latin America and the Caribbean. Departmental approval.

GEOG 5310 GEOGRAPHY OF RURAL CHANGE (3) LEC. 3. Examination of the patterns and processes associated with population levels and distributions, natural resource management systems, economic development, and cultural landscapes of rural communities. Credit will not be given for both GEOG 5310 and GEOG 6310.

GEOG 5350 ECONOMIC GEOGRAPHY (3) LEC. 3. Economic Geography in a global context. Spatial aspects of resource use, agricultural development, manufacturing production and services. Departmental approval.

GEOG 5400 GEOGRAPHY OF NATURAL HAZARDS (3) LEC. 3. Geography of natural hazards and their impacts on society. Credit will not be given for both GEOG 5400 and GEOG 6400.

GEOG 5500 GEOGRAPHY OF ENVIRONMENTAL MANAGEMENT (3) LEC. 3. Understanding and application of the theories and methods for the United States' version of environmental impact assessment. Departmental approval.

GEOG 5510 HUMAN-ENVIRONMENT INTERACTION (3) LEC. 3. Investigation of the inter-relationships between humans and their natural or physical environments. Departmental approval.

GEOG 5600 GLOBAL RESOURCES AND THE ENVIRONMENT (3) LEC. 3. Global environmental problems such as climate change, ozone and deforestation and international public agencies and private volunteer movements protecting our global commons. Departmental approval.

GEOG 5700 QUANTITATIVE METHODS AND SPATIAL ANALYSIS (3) LEC. 3. Pr., STAT 2510. Geographic methods and techniques used to conduct Field research investigations of human and physical characteristics of the landscape. Credit will not be given for both GEOG 5710 and GEOG 6710.

GEOG 5710 GEOGRAPHIC FIELD METHODS (3) LEC. 1. LAB. 4. Geographic methods and techniques used to conduct field research investigations of human and physical characteristics of the landscape. Credit will not be given for both GEOG 5710 and GEOG 6710.

GEOG 5800 GEOGRAPHIC THOUGHT (3) LEC. 3. Develops effective thinking skills, evaluates written materials in geography, reviews geographical research and produces written reports and papers related to geographic issues. Departmental approval.

GEOG 5820 AERIAL PHOTOGRAPHY AND REMOTE SENSING (4) LEC. 3. LAB. 2. Pr., GEOG 2800. Aerial photo and satellite digital interpretation, photogrammetry, remote sensing technology and photogrammetry and related laboratory exercises. Departmental approval.

GEOG 5830 GEOGRAPHIC INFORMATION SYSTEMS (4) LEC. 3. LAB. 2. Introduction to concepts and techniques used in developing a geographic information system (GIS) for evaluating spatial distribution patterns and spatial relationships.

GEOG 5860 ADVANCED CONCEPTS IN CARTOGRAPHY (3) LEC. 2. LAB. 2. Pr., GEOG 3810. Advanced techniques of map design and production including relevant computer graphics applications and related laboratory exercises. Credit will not be given for both GEOG 5860 and GEOG 6860.

GEOG 5870 ADVANCED REMOTE SENSING (3) LEC. 2. LAB. 2. Pr., GEOG 5820. Explores advanced topics of remote sensing for use in research and analysis. Credit will not be given for both GEOG 5870 and GEOG 6870.

GEOG 5880 ADVANCED GEOGRAPHIC INFORMATION SYSTEMS (3) LEC. 2. LAB. 2. Pr., GEOG 5830. Advanced concepts and techniques used in the collection and analysis of data for evaluating spatial patterns and process. Credit will not be given for both GEOG 5880 and GEOG 6880.

GEOG 5970 SEMINAR IN GEOGRAPHY (3) LEC. 3. Development of modern geographic thinking with attention to applied research topics. Course may be repeated for a maximum of 6 credit hours.

GEOG 6010 URBAN GEOGRAPHY (3) LEC. 3. Analysis of urban pattern and the process creating them.

GEOG 6210 CLIMATOLOGY (3) LEC. 3. The atmosphere and global circulation, El Nino, regional patterns, paleoclimate reconstruction, climate change, climate influences on health and human activities, data sources and statistical analysis, and GIS applications.

GEOG 6220 GEOMORPHOLOGY (3) LEC. 3. Basic concepts, terms, and techniques used to identify landforms and their evolutionary processes. Credit will not be given for both GEOG 5220 and GEOG 6220.

GEOG 6300 ADVANCED REGIONAL STUDIES IN GEOGRAPHY (3) LEC. 3. Spatial patterns of socio-economic development of Latin America and the Caribbean. Departmental approval.

GEOG 6310 GEOGRAPHY OF RURAL CHANGE (3) LEC. 3. Examination of the patterns and processes associated with population levels and distributions, natural resource management systems, economic development, and cultural landscapes of rural communities. Credit will not be given for both GEOG 5310 and GEOG 6310.

GEOG 6350 ECONOMIC GEOGRAPHY (3) LEC. 3. Economic Geography in a global context. Spatial aspects of resource use, agricultural development, manufacturing production and services. Departmental approval.

GEOG 6400 GEOGRAPHY OF NATURAL HAZARDS (3) LEC. 3. Geography of natural hazards and their impacts on society. Credit will not be given for both GEOG 5400 and GEOG 6400.

GEOG 6500 GEOGRAPHY OF ENVIRONMENTAL MANAGEMENT (3) LEC. 3. Understanding and application of the theories and methods for the United States' version of environmental impact assessment. Departmental approval.

GEOG 6510 HUMAN-ENVIRONMENT INTERACTION (3) LEC. 3. Investigation the inter-relationships between humans and their natural or physical environments. Departmental approval.

GEOG 6600 GLOBAL RESOURCES AND THE ENVIRONMENT (3) LEC. 3. Departmental approval. Global environmental problems such as climate change, ozone and deforestation and international public agencies and private volunteer movements protecting our global commons.

GEOG 6700 QUANT METH & SPATIAL ANALYSIS (3) LEC. 3. Pr., STAT 2510.or similar statistics course. Quantitative methodology necessary for spatial analysis research. Credit will not be given for both GEOG 5700 and GEOG 6700.

GEOG 6710 GEOGRAPHIC FIELD METHODS (3) LEC. 1. LAB. 4. Geographic methods and techniques used to conduct field research investigations of human and physical characteristics of the landscape. Credit will not be given for both GEOG 5710 and GEOG 6710.

GEOG 6800 GEOGRAPHIC THOUGHT (3) LEC. 3. Develops effective thinking skills; evaluates written materials in geography; Reviews geographical research and produces written reports and papers related to geographic issues. Departmental approval.

GEOG 6820 AERIAL PHOTOGRAPHY AND REMOTE SENSING (4) LEC. 3. LAB. 2. Aerial photo and satellite digital interpretation, photogrammetry, remote sensing technology and photogrammetry and related laboratory exercises. Departmental approval.

GEOG 6830 GEOGRAPHIC INFORMATION SYSTEMS (4) LEC. 3. LAB. 2. Introduction to concepts and techniques used in developing a geographic information system (GIS) for evaluating spatial distribution patterns and spatial relationships. Departmental approval.

GEOG 6860 ADVANCED CONCEPTS IN CARTOGRAPHY (3) LEC. 2. LAB. 2. Pr., GEOG 3810.Advanced techniques of map design and production including relevant computer graphics applications and related laboratory exercises. Credit will not be given for both GEOG 5860 and GEOG 6860.

GEOG 6870 ADVANCED REMOTE SENSING (3) LEC. 2. LAB. 2. Pr., GEOG 6820.Explores advanced topics of remote sensing for use in research and analysis. Credit will not be given for both GEOG 5870 and GEOG 6870.

GEOG 6880 ADVANCED GEOGRAPHIC INFORMATION SYSTEMS (3) LEC. 2. LAB. 2. Pr., GEOG 6830.Advanced concepts and techniques used in the collection and analysis of data for evaluating spatial patterns and processes. Credit will not be given for both GEOG 5880 and GEOG 6880.

GEOG 6970 SEMINAR IN GEOGRAPHY (3) LEC. 3. Development of modern geographic thinking with attention to applied research topics. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

GEOG 7990 M.S. RESEARCH AND THESIS (1-10) RES. Research and Thesis.

Geology - GEOL

Courses

GEOL 1100 PHYSICAL GEOLOGY (4) LEC. 3. LAB. 2. Coreq., GEOL 1101 Science Core. General physical geology. Survey of the important minerals and rocks. Origin and classification of geologic structures, earthquakes, and landforms. Study of geologic maps. Credit will not be given for both GEOL 1100 and GEOL 3150.

GEOL 1101 PHYSICAL GEOLOGY LABORATORY (0) LAB. 2. Coreq., GEOL 1100 Examination of rocks and minerals and use of geologic and topographic maps; Problems in structural geology, earthquakes, and landforms.

GEOL 1110 HISTORICAL GEOLOGY (4) LEC. 3. LAB. 2. Pr., GEOL 1100. Science Core. Physical and biological history of the Earth, with emphasis on the evolution of life forms.

GEOL 1111 HISTORICAL GEOLOGY LABORATORY (0) LAB. 2. Pr., GEOL 1100. Coreq., GEOL 1110 Examination of rock, fossil, and related data sets bearing on the geological development of the earth with emphasis on North America.

GEOL 1200 MARINE TECHNICAL METHODS (2) LAB. 8. Introduction to procedures utilized aboard marine research vessels; physical, biological and geological measurements and sampling techniques. Taught only at Dauphin Island Sea Lab. Summer. Departmental approval.

GEOL 1220 COASTAL CLIMATOLOGY (2) LEC. 7. Controlling factors and features of world climates, with attention to coastal areas; application and interpretation of climate data. Taught only at Dauphin Island Sea Lab. Summer only. Departmental approval.

GEOL 2010/2013 MINERALOGY AND OPTICAL CRYSTALLOGRAPHY (5) LEC. 4. LAB. 2. Pr., CHEM 1040. Departmental approval. Physical and chemical properties of minerals, classification and roles with emphasis on natural systems, materials science, health, and environment. Credit will not be given for both GEOL 2010 and GEOL 2013.

GEOL 2020 MARINE GEOLOGY (4) LEC. 2. LAB. 4. Geology of ocean basins; special emphasis on continental shelves, their sediments and the sedimentary process at work there. Taught only at Dauphin Island Sea Lab. Summer only. Departmental approval.

GEOL 2050 IGNEOUS AND METAMORPHIC PETROLOGY (4) LEC. 3. LAB. 2. Pr., GEOL 2010. Principles and processes of igneous and metamorphic activity in a plate tectonic and petrologic context. Description, classification and interpretation of igneous and metamorphic rocks.

GEOL 2100 ENVIRONMENTAL GEOLOGY (4) LEC. 3. LAB. 2. Pr., GEOL 1100. Emphasis on geology as an environmental science; applied geology, geological hazards and environmental regulations as applied to geologic environmental remediation.

GEOL 3060 LUNAR AND PLANETARY GEOLOGY (3) LEC. 2. LAB. 2. Pr., GEOL 1100. Geology of the planets, moons, asteroids and comets. Origin of the solar system. Space exploration. Impact cratering. Departmental approval.

GEOL 3100 TERRESTRIAL VEGETATION THROUGH EARTH HISTORY (3) LEC. 2. LAB. 2. Pr., GEOL 2200 and (BIOL 1020 or BIOL 1027). Plants are primary producers and are the foundation upon which the global ecosystem is based. This course focuses on the development, evolution, and application of the plant fossil record to problems in earth history.

GEOL 3150 ENGINEERING GEOLOGY (3) LEC. 2. LAB. 2. Fundamental geologic principles, materials, and processes that affect engineering projects and programs. Emphasis on pre-construction geological analysis to recognize potential hazards and problems. Credit will not be given for both GEOL 3150 and GEOL 1100.

GEOL 3200 PRINCIPLES OF PALEONTOLOGY (3) LEC. 2. LAB. 2. Pr., GEOL 1110. The nature of the fossil record, applications of that data to geological and biological questions with emphasis on the concepts using examples from all biotic groups.

GEOL 3300 EVOLUTION AND EXTINCTION OF THE DINOSAURIA (3) LEC. 2. LAB. 2. Pr., GEOL 1100. Survey of the dinosaurs, their evolution and extinction. Southeastern U.S. dinosaurs. Departmental approval.

GEOL 3400 STRUCTURAL GEOLOGY (4) LEC. 3. LAB. 2. Pr., GEOL 2050. Fundamentals of rock deformation. The mechanics of rock flow, fracture, and folding. Geometric techniques of structural analysis.

GEOL 3650 FIELD CAMP (6) LEC. 1. LAB. 10. Pr., GEOL 3400. Instruments and methods used in geological field mapping, interpretation of sedimentary, igneous and metamorphic rocks and deformational analysis. Summer only.

GEOL 4010 SEDIMENTARY PETROLOGY (3) LEC. 2. LAB. 2. Pr., GEOL 2050. Detailed description and classification of sediments and sedimentary rocks with emphasis on interpretation of origins, transport histories, depositional environments and diagenetic histories. Departmental approval.

GEOL 4110 STRATIGRAPHY (3) LEC. 2. LAB. 2. Pr., GEOL 4010. Description and correlation of layered earth materials. Synthesis and interpretation of stratigraphic correlations. North American Stratigraphic Code. History and theory of stratigraphy. Departmental approval.

GEOL 4210 ECONOMIC GEOLOGY (3) LEC. 2. LAB. 2. Pr., GEOL 3400. The origin, distribution and classification of mineral deposits formed by igneous, metamorphic and sedimentary processes. Introduction of methods of exploration and development.

GEOL 4260 INTRODUCTION TO GEOCHEMISTRY (3) LEC. 3. Pr., CHEM 1040 and GEOL 2050. Principles governing the distribution of major, minor and trace elements within the earth; differentiation of elements due to geologic processes and the hydrosphere.

GEOL 4300 GEODYNAMICS (3) LEC. 3. Pr., GEOL 3400 and (MATH 1620 or MATH 1627) and PHYS 1510. Structure and dynamics of the earth deduced from seismology, gravity, heat flow and magnetism.

GEOL 4740 GEOLOGY SENIOR SEMINAR (1) LEC. 1. Pr., GEOL 4010. Current concepts and research findings in the principal subject areas within the broad discipline of geology.

GEOL 4930 DIRECTED STUDIES IN UNDERGRADUATE RESEARCH (1-3) IND. Directed studies in areas of geology not covered by an existing course or to supplement knowledge gained from an existing course. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

GEOL 4980 UNDERGRADUATE RESEARCH METHODS (1-3) IND. Active participation in original research under supervision of a senior investigator. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

GEOL 4997 HONORS THESIS (2-4) LEC. 3. Pr., Honors College. May incorporate library, field or laboratory research in any proportion. Written thesis and thesis defense required. Course may be repeated for a maximum of 4 credit hours.

GEOL 5060 INVERTEBRATE PALEONTOLOGY (4) LEC. 3. LAB. 2. Pr., GEOL 3200 and (BIOL 1030 or BIOL 1037). In-depth coverage of the invertebrate fossil record, focusing on the systematics and evolutionary history of major groups. Laboratory/discussion sessions and field trips included.

GEOL 5100 HYDROGEOLOGY (3) LEC. 2. LAB. 2. Pr., GEOL 1100 and CHEM 1030 and MATH 1610 and GEOG 5830 and PHYS 1500. Fundamentals of groundwater flow in porous media, hydrodynamic dispersion, determination of aquifer properties and geological aspects of groundwater occurrences. Departmental approval.

GEOL 5240 COASTAL GEOMORPHOLOGY (2) LEC. 5. LAB. 4. Introduction to coastal sediment processes and applied coastal geomorphology; emphasis on waves, tides, sediments and their impact of anthropogenic influences. Taught only at Dauphin Island Sea Lab. Summer only. Departmental approval.

GEOL 5300 BASIN ANALYSIS (3) LEC. 2. LAB. 2. Pr., P/C, GEOL 4010. Study of analytical techniques of sedimentary basin fills, including thermal history, litho and biofacies analyses, depositional systems, subsurface logs, seismic reflection, provenance history, evolution, sedimentation and subsidence history.

GEOL 5400 PRINCIPLES OF EARTH SCIENCE (3) LEC. 2. LAB. 2. A special course for in-service and future teachers only. Internal and surficial geologic processes, meteorology and oceanography. Departmental approval.

GEOL 5600 APPLIED GEOPHYSICS (4) LEC. 3. LAB. 2. Pr., (GEOL 1100 or GEOL 3150) and (MATH 1620 or MATH 1627) and PHYS 1510. Overview of geophysical methods with applications to resource, tectonic and environmental analyses. Seismic refraction and reflection, gravity, magnetism, electrical and electromagnetic methods will be included. Departmental approval.

GEOL 6060 INVERTEBRATE PALEONTOLOGY (4) LEC. 3. LAB. 2. Pr., GEOL 3200 and (BIOL 1030 or BIOL 1037). In-depth coverage of the invertebrate fossil record, focusing on the systematics and evolutionary history of major groups. Laboratory/discussion sessions and field trips included. Departmental approval.

GEOL 6100 HYDROGEOLOGY (3) LEC. 2. LAB. 2. Pr., GEOL 1100 and CHEM 1030 and MATH 1610 and (GEOG 5830 or GEOG 6830) and PHYS 1500. Fundamentals of groundwater flow in porous media, hydrodynamic dispersion, determination of aquifer properties and geological aspects of groundwater occurrences. Departmental approval.

GEOL 6240 COASTAL GEOMORPHOLOGY (2) LEC. 5. LAB. 4. Introduction to coastal sediment processes and applied coastal geomorphology; emphasis on waves, tides, sediments and their impact of anthropogenic influences. Taught only at Dauphin Island Sea Lab. Summer only. Departmental approval.

GEOL 6300 BASIN ANALYSIS (3) LEC. 2. LAB. 2. Pr., GEOL 4010. Study of analytical techniques of sedimentary basin fills, including thermal history, litho and biofacies analyses, depositional systems, subsurface logs, seismic reflection, provenance history, evolution, sedimentation and subsidence history. Departmental approval.

GEOL 6400 PRINCIPLES OF EARTH SCIENCE (3) LEC. 2. LAB. 2. A special course for in-service and future teachers only. Internal and surficial geologic processes, meteorology and oceanography. Departmental approval.

GEOL 6600 APPLIED GEOPHYSICS (4) LEC. 3. LAB. 2. Pr., (GEOL 1100 or GEOL 3150) and MATH 1620 and PHYS 1510. Overview of geophysical methods with applications to resource, tectonic and environmental analyses. Seismic refraction and reflection, gravity, magnetics, electrical and electromagnetic methods will be included. Departmental approval.

GEOL 7100 GEOCOMMUNICATION (3) LEC. 3. Instruction and practice in written and oral communication skills necessary for a successful career in the geosciences; emphasis on preparation of scientific articles, technical reports, abstracts, and thesis; preparation and delivery of oral presentations. Departmental approval.

GEOL 7200 TECTONICS (3) LEC. 2. LAB. 2. Pr., GEOL 2050 and GEOL 4010. Emphasis will be placed on plate tectonics and driving forces, evolution of collisional, transform and extensional systems, and dynamic indicators of past and current tectonic processes. Departmental approval.

GEOL 7220 GEOGRAPHIC INFORMATION SYSTEMS AND MARINE RESEARCH (3) LEC. 10. LAB. 15. Introduction to geographical information system (GIS) techniques with a focus on application in the marine environment. Taught only at Dauphin Island Sea Lab. Summer only. Departmental approval.

GEOL 7250 GROUNDWATER HYDROGEOLOGIC MODELING (3) LEC. 2. LAB. 2. Pr., GEOL 6100. Overview of groundwater modeling techniques with environmental and geologic applications. Interaction of geology and subsurface groundwater flow. Basin hydrology modeling. Practical experience in computer simulations of subsurface hydrogeologic processes. Departmental approval.

GEOL 7260 AQUEOUS AND ENVIRONMENTAL GEOCHEMISTRY (3) LEC. 2. LAB. 2. Pr., CHEM 1040 and GEOL 2050. Study of water-rock reactions that control the chemical composition of groundwater; aqueous geochemistry of trace elements; groundwater pollution, remediation and geomicrobiology. Departmental approval.

GEOL 7300 CYCLES THROUGH EARTH HISTORY (3) LEC. 2. LAB. 2. Pr., GEOL 4100 and GEOL 4260. Discussion of the fundamental processes controlling sedimentary cycles at different physical, biotic, and temporal scales.

GEOL 7310 ISSUES IN PALEONTOLOGY (3) LEC. 3. Pr., GEOL 3200. Advanced applications of paleontological data sets to topics that may include taphonomy, biogeochemistry, evolution, asystematic functional morphology, paleoecology, paleoclimatology and biostratigraphy.

GEOL 7400 ADVANCED ECONOMIC GEOLOGY (3) LEC. 2. LAB. 2. Pr., GEOL 4210. The practical and theoretical aspects of economic geology as applied to exploration and development of natural resources. Departmental approval.

GEOL 7410 GEOLOGY OF ORGANIC MATTER (3) LEC. 2. LAB. 2. Pr., GEOL 4010 and GEOL 4110. The origins, classifications, taphonomy of organic matter, modern and ancient processes and environments of deposition of organic-rich strata, including hydrocarbon- source rocks and coals. Laboratory and field trips required. Departmental approval.

GEOL 7450 MINERAL RESOURCES AND THE ENVIRONMENT (3) LEC. 2. LAB. 2. Pr., CHEM 1040 and GEOL 2050. Overview of geology and geographic distribution of mineral resources; economic aspects affecting their extraction; environmental impacts and cost of mineral resource extraction.

GEOL 7550 ADVANCED GEOPHYSICAL METHODS (3) LEC. 2. LAB. 2. Pr., GEOL 6600. Advanced treatment of geophysical methods, data interpretation and modeling. Applications to resource development and environmental assessments will be explored, with emphasis on seismic methods. Departmental approval.

GEOL 7600 PETROLOGY (3) LEC. 2. LAB. 2. Pr., GEOL 2050 and GEOL 4010. The description, classification, formative processes, and petrologic interpretation of igneous, metamorphic and sedimentary rocks. Departmental approval.

GEOL 7610 STRUCTURAL AND METAMORPHIC ANALYSIS (3) LEC. 2. LAB. 2. Pr., GEOL 2050 and GEOL 3400 and GEOL 3650. Quantitative analysis of dynamic, kinematic and chemical responses of rocks and minerals to crustal movements and dynamo thermal metamorphism.

GEOL 7650 FACIES ANALYSIS AND SEQUENCE STRATIGRAPHY (3) LEC. 2. LAB. 2. Pr., GEOL 4010 and GEOL 4110. Systematic analysis of modern and ancient deposition facies, and their interpretation in a sequence stratigraphic context. Laboratory and field trips required. Departmental approval.

GEOL 7930 DIRECTED STUDIES (1-3) LEC. 3. Directed studies. May incorporate literature, field and/or laboratory research in any proportion. Subject matter and credit hours shall be determined by student and directing faculty. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

GEOL 7980 CAPSTONE PROJECT (1-3) LEC. SU. Literature, field and/or laboratory research directed towards completion of capstone project required for non-thesis option. Course may be repeated for a maximum of 3 credit hours.

GEOL 7990 RESEARCH AND THESIS (1-10) MST. Departmental approval. Course may be repeated with change in topics.

Graduate Studies - GRAD

Courses

GRAD 5AA0 AUTHORIZED DROP BELOW FULL-TIME (0) IND.

GRAD 6AA0 AUTHORIZED FOR FULL-COURSE OF STUDY (0) IND. Course should not be printed in bulletin or in the schedule of classes booklet. Departmental approval.

GRAD 7000 CLEARING REGISTRATION (0) LEC. May be used to register graduate students to graduate who have finished all graduation requirements by the last day of the previous semester, to remove incomplete grades, or to complete comprehensive examination for non-thesis students.

GRAD 7AA0 THESIS OR PROJECT COMPLETION (0) IND. Coreq., Minimum of one (1) hour of 7910/6, 7920/6, 7950/6 or 7980 or 7990 or enrollment in GRAD 7000. Open to thesis option graduate students, non-thesis students engaged in research for special projects, or students completing practica or internships. No grade.

GRAD 8940 PREPARING FUTURE FACULTY SEMINAR I (1) LEC. 1. SU. This course introduces graduate students to a variety of faculty roles and work environments. Seminar participants prepare teaching philosophy and research statements, engage in micro-teaching and peer review, discuss evolving definitions of scholarship, and engage in other professional activities. Students participate in seminars and workshops to discuss faculty teaching and research roles and responsibilities, campus life and faculty governance at differing types of academic Departmental approval.

GRAD 8950 PREPARING FUTURE FACULTY SEMINAR II (1) PRA/SEM. 1. SU. Pr., GRAD 8940. This course is a continuation of PFF Seminar 1. It introduces graduate students to a variety of faculty roles and work environments. Seminar participants prepare online professional portfolios, present instruction and critique job talks and learn about the role of technology in teaching. Students participate in seminars and workshops to discuss faculty teaching, research, service and outreach roles and responsibilities, campus life and faculty governance at differing types of academic institutions.

GRAD 8AA0 DISSERTATION COMPLETION (0) IND. Restricted to doctoral students. No grade. Additional prerequisite: minimum of 1 hour of 8910, 8920, 8950, 8980, or 8990.

GRAD 8XX0 AU/AUM JOINT PROGRAM IN PUBLIC ADMINISTRATION (0) IND. Joint Program in Public Administration. AU registration for PUB doctoral students who are registered concurrently at AUM. Enrollment at AUM.

Graphic Design - GDES

Courses

GDES 1110 FOUNDATION DRAWING (4) STU. 8. Coreq., GDES 1210PGDE majors only; departmental approval. Representational drawing with various media. Emphasis on accurate observation, pictorial organization, depiction of space as well as on concept development and creativity.

GDES 1210 FOUNDATION DESIGN I (4) LEC. 1, STU. 6. Coreq., GDES 1110PGDE majors only; departmental approval. Elements and principles of basic two-dimensional design. Emphasis on composition, color theory, and craftsmanship.

GDES 1220 FOUNDATION DESIGN II (4) LEC. 1, STU. 6. Pr., GDES 1210. Elements and principles of design with emphasis on basic three dimensional design. Emphasis on spatial organization, color, and media exploration, planning and craft.

GDES 2210 GRAPHIC PROCESSES (4) LEC. 1, STU. 6. Pr., GDES 1110 and GDES 1210 and GDES 1220 and (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). Design and production processes, preparation of design for printing, paper, copyright, electronic techniques, and related subjects. Departmental approval.

GDES 2220 TYPOGRAPHICS I (4) LEC. 1, STU. 6. Pr., GDES 1110 and GDES 1210 and GDES 1220 and (ARTS 1710 and ARTS 1720) or (ARTS 1710 and ARTS 1730) or (ARTS 1720 and ARTS 1730). Historical development and practical applications of typography for design, layout, and other contemporary formats. Departmental approval.

GDES 2230 INTRODUCTION TO GRAPHIC DESIGN (4) STU. 8. Pr., GDES 2210 and GDES 2220. Design, layout, and image-making procedures for creative problem-solving in graphic design, with emphasis on presentation, creativity, and visualization. Departmental approval. Portfolio review required.

GDES 3210 PHOTO DESIGN (4) STU. 8. Pr., GDES 2210 and GDES 2220. Traditional black and white film photography that covers covers technical aspects of the 35mm camera and film and basic darkroom procedures for black and white film and and basic darkroom procedures for black and white film and an awareness of the aesthetics and semantics associated with photographic imagery.

GDES 3220 PHOTO COMMUNICATIONS (4) STU. 8. Pr., GDES 2230 and GDES 3210. Photography as applied communication such as advertising, editorial photography, and annual report photography. Emphasis on advanced technological and studio techniques.

GDES 3230 LETTERPRESS IMAGING (4) LEC. 1, LST. 3. Pr., GDES 2230. Experimental imaging using letterpress equipment to develop new techniques appropriate to today's communications industry. Emphasis on individual creativity, experimentation and initiative.

GDES 3240 INTERACTIVE MEDIA (4) STU. 8. Pr., GDES 2230. Exploration of the technical and conceptual aspects of Web site design and motion graphics through a series of problem-solving processes. Emphasis on the research and development of effective graphic interfaces and information architecture.

GDES 3250 TYPOGRAPHICS II (4) STU. 8. Pr., GDES 2230. Experimental application of typography for design and layout, exploring contemporary techniques. Historical understanding expected. Emphasis on presentation and visualization of concepts.

GDES 3710 GRAPHIC DESIGN HISTORY (4) LEC. 4. Pr., GDES 2230. History of graphic design, with emphasis on social and cultural contexts, symbolic application, formal characteristics, and significant movements.

GDES 3920 GRAPHIC DESIGN INTERNSHIP (4) INT. 4. Pr., GDES 2230. a fifteen-week period working full time as a staff member with an approved internship sponsor under the direction of a supervising art director.

GDES 4240 GRAPHIC DESIGN I (4) STU. 8. Pr., GDES 3710. Application of communicative procedures and skills necessary to convey messages by means of graphic presentation: problem solving in corporate identity, advertising design, self promotion, etc. Development of student's individual style. Courses in this sequence may not be taken concurrently.

GDES 4250 GRAPHIC DESIGN II (4) STU. 8. Pr., GDES 4240. Development of individual style in communication via graphic graphic presentation, with emphasis on problem-solving in publication design, self-promotion, large-format design, and layout.

GDES 4260 MAGAZINE DESIGN (4) STU. 8. Pr., GDES 2230. Concepts of graphic design are explored; specifically an understanding of grid, message-making and qualities of design in the format magazine.

GDES 4270 ADVANCED INTERACTIVE MEDIA (4) STU. 8. Pr., GDES 3240. Focuses on the principles and methodologies used throughout the interactive design industry for creating screen-based dynamic media. Students develop a conceptual framework for real world applications, exploring industrial, social and cultural issues.

GDES 4640 IMAGE I (4) STU. 8. Pr., GDES 2230. Application of illustration techniques and concepts to various graphic formats. Development of personal skills and individual style.

GDES 4650 IMAGE II (4) STU. 8. Pr., GDES 2230. Exploration of two dimensional and three dimensional imaging techniques and concepts. Development of personal skills and an individual style.

GDES 4900 DIRECTED STUDIES FOR GRAPHIC DESIGN (2-3) AAB. Pr., GDES 2210 and GDES 2220. Directed Studies in Graphic Design focuses on individualized study in Graphic Design. Student must have a 3.0 average in GDES course curriculum and departmental approval. Topics may include Graphic Design, Imaging, Web Design. Course may be repeated for a maximum of 9 credit hours.

GDES 4970 SPECIAL TOPICS FOR GRAPHIC DESIGN (4) LEC. 1, LST/ST1. 6. Pr., GDES 2230 and GDES 3710. Special Topics in Graphic Design focuses on topics in graphic design that are additional to the regular curriculum. Specific course topics are developed by the instructor. Student must have a 3.0 average in GDES GDES course curriculum. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

GDES 4990 SENIOR PROJECT FOR GRAPHIC DES (5) STU. 10. Pr., GDES 4250. Coreq., GDES 4991A directed terminal studio project with choice of subject and medium. Project will be exhibited and a faculty committee will award a letter grade. Must be taken in student's final semester.

GDES 4991 RESEARCH, WRITING AND PRESENTATION (1) LEC. 1. Pr., GDES 4250. Coreq., GDES 4990 Addresses research, writing and presentation requirement associated with the student's terminal studio project. Must be taken in student's final semester.

Health Administration - HADM

Courses

HADM 2100/2103 MEDICAL TERMINOLOGY (3) LEC. 3. Prefixes, suffixes, and word roots used in the language of medicine; medical vocabulary and terms related to the health care field.

HADM 3000 GATEWAY TO HEALTH CARE ADMINISTRATION (3) LEC. 3. Basic concepts and principles of health care administration.

HADM 3300 HEALTH CARE POLICY (3) LEC. 3. Pr., HADM 3000. Political policies that affect health care services.

HADM 3700 HEALTH LAW (3) LEC. 3. Legal issues that arise between patients and health care providers.

HADM 4000 DEVELOPING CARE ORGANIZATIONS (3) LEC. 3. Pr., HADM 3300. Organizational strategies for effective interfacing of medical, nursing, allied health and administrative staff with patient needs.

HADM 4200 HEALTH CARE INSURANCE AND REIMBURSEMENT (3) LEC. 3. Pr., HADM 3000. Health insurance operations, principles, payment methods and contracts.

HADM 4800 HEALTH ADMINISTRATION AND REGULATION (3) LEC. 3. Pr., HADM 3300. Government regulatory programs affecting administration of health services organizations.

HADM 4810 CHANGE IN HEALTH ADMINISTRATION (3) LEC. 3. Pr., HADM 3300. Changes in modern technology, cultural diversity, and governmental policies on the administration of health services organizations.

HADM 4820 LONG-TERM CARE ADMINISTRATION (3) LEC. 3. Pr., HADM 3300. Analysis of the components (e.g. nursing homes, home health care) of the long-term care system for the elderly.

HADM 4830 COMPARATIVE HEALTH CARE SYSTEMS (3) LEC. 3. Pr., HADM 3300. Comparative Study and analysis of health care systems around the world.

HADM 4850 LONG-TERM CARE POLICY (3) LEC. 3. Pr., HADM 3300. Policy issues surrounding the provision of long-term care to the elderly.

HADM 4880 HEALTH INFORMATION TECHNOLOGY (3) LEC. 3. Pr., HADM 3300. Overview and utilization of health care information technology in health care administration.

HADM 4920 INTERNSHIP (6) AAB/INT. SU. Pr., HADM 2100 and HADM 3300 and HADM 4200 and FINC 3810 or FINC 3610 and HRMN 3420. Internship in selected areas of Health Administration.

HADM 4930 DIRECTED STUDIES (1-3) AAB/IND. Directed studies in Health Administration. Course may be repeated for a maximum of 3 credit hours.

HADM 4950 CAPSTONE SEMINAR (3) LEC. 3. Pr., HADM 3300 and HADM 4200 and FINC 3810 or FINC 3610. Integrates knowledge from courses and internship; applies managerial and research skills to the completion of a research project and the organization of a research symposium.

HADM 4960 SPECIAL PROBLEMS IN HEALTH ADMINISTRATION (1-6) IND. Pr., HADM 3300. Directed readings in Health Administration. Course may be repeated for a maximum of 6 credit hours.

HADM 4970 SPECIAL TOPICS (1-3) AAB. Pr., HADM 3300. Selected topics in Health Administration. Course may be repeated for a maximum of 9 credit hours.

Higher Education Admin - HIED

Courses

HIED 7200 ORGANIZATIONAL ISSUES IN HIGHER EDUCATION (3) LEC. 3. Theory and practice of higher education organizations with emphasis on supervision and management of personnel.

HIED 7210 LEADERSHIP IN HIGHER EDUCATION (3) LEC. 3. Exploration, discussion and application of theories, concepts and principles of leadership applied to higher education organizations. May count either EDLD 7210 or HIED 7210.

HIED 7220 HIGHER EDUCATION MANAGEMENT (3) LEC. 3. Procedures and practices in school educational management.

HIED 7230 STUDENT SERVICES ADMINISTRATION POSTSECONDARY EDUCATION (3) LEC. 3. Organization, administration and evaluation of student personnel services in postsecondary education.

HIED 7240 LEGAL ISSUES IN HIGHER EDUCATION (3) LEC. 3. Constitutional and statutory provisions for education and an analysis of judicial decisions affecting higher education.

HIED 7250 COLLEGE STUDENT DEVELOPMENT (3) LEC. 3. Overview of major developmental theories affecting college students.

HIED 7260 COUNSELING AND ADVISING IN HIGHER EDUCATION (3) LEC. 3. Introduces counseling and advising theory and application for student services professionals in higher education.

HIED 7270 OVERVIEW OF POSTSECONDARY EDUCATION (3) LEC. 3. Overview of the history and evolution of postsecondary education in North America.

HIED 7400 SPORT MARKETING AND PUBLIC RELATIONS (3) LEC. 3. Marketing and public relations of sport organizations as associated with higher education institutions.

HIED 7410 SPORT ETHICS (3) LEC. 3. Covers ethical issues in sport organizations as associated with higher education institutions.

HIED 7900 DIRECTED STUDIES (1-6) IND. SU. Independent study directed toward desired objectives. Includes evaluation by professor and student at regular intervals. Course may be repeated for a maximum of 9 credit hours.

HIED 7910 PRACTICUM (3) PRA. 3. Experience in the management of specific administrative offices. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

HIED 7920 INTERNSHIP (1-6) INT. SU. Supervised internship experiences in a school, college or other appropriate setting. Evaluation and analysis of the internship experience. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

HIED 7970 SPECIAL TOPICS (1-6) LEC. Current or advanced topics within area of specialization. Course may be repeated for a maximum of 6 credit hours.

HIED 8200 ASSESSMENT AND EVALUATION IN HIGHER EDUCATION (3) LEC. 3. Study of assessment and evaluation practices that enable learning organizations to use data for decision-making.

HIED 8230 PLANNING AND BUDGETING IN HIGHER EDUCATION (3) LEC. 3. Components and implementation of a comprehensive, ongoing planning and budgeting program in higher education.

HIED 8270 FINANCIAL MANAGEMENT IN HIGHER EDUCATION (3) LEC. 3. Educational finance including revenues, expenditures, cost, budgeting and accounting, and the local, state and federal role in supporting education.

HIED 8480 INSTITUTIONAL RESEARCH IN HIGHER EDUCATION (3) LEC. 3. Components of institutional research and assessment that support comprehensive planning, analysis, decision support and management needs of the higher educational institution May count either EDLD 8480 or HIED 8480.

HIED 8500 THE PROFESSORiate (3) LEC. 3. Study of differences and similarities in faculty roles, work, and career paths using various disciplinary and institutional lenses.

HIED 8510 SEMINAR IN COLLEGE TEACHING (3) LEC/SEM. 3. Overview of major issues in higher education and methods of instruction in college teaching. Involves use of experiential learning, group and collaborative activities.

HIED 8950 SEMINAR (3) LEC. 3. Presentation by graduate students of research projects and/or analysis of procedures and finding. Course may be repeated for a maximum of 6 credit hours.

HIED 8990 RESEARCH AND DISSERTATION (1-10) DSR. Individualized support and direction for students writing their dissertation. Course may be repeated for a maximum of 10 credit hours.

History - HIST

Courses

HIST 1010 WORLD HISTORY I (3) LEC. 3. History Core. Survey of world history from early humanity to the late eighteenth century.

HIST 1017 HONORS WORLD HISTORY I (3) LEC. 3. Pr., Honors College. History Core. A survey of world history from early humanity to the late eighteenth century.

HIST 1020 WORLD HISTORY II (3) LEC. 3. History Core. Survey of world history since the Industrial Revolution.

HIST 1027 HONORS WORLD HISTORY II (3) LEC. 3. Pr., Honors College. History Core. Survey of world history since the Industrial Revolution.

HIST 1210 TECHNOLOGY AND CIVILIZATION I (3) LEC. 3. History Core. Survey of the role of technology in history from prehistoric times to the beginning of the Industrial Revolution.

HIST 1217 HONORS TECHNOLOGY AND CIVILIZATION I (3) LEC. 3. Pr., Honors College. History Core. Survey of the role of technology in history from prehistoric times to the beginning of the Industrial Revolution.

HIST 1220 TECHNOLOGY AND CIVILIZATION II (3) LEC. 3. History Core. Survey of the role of technology from the Industrial Revolution to the present day.

HIST 1227 HONORS TECHNOLOGY AND CIVILIZATION II (3) LEC. 3. Pr., Honors College. History Core. Survey of the role of technology from the Industrial Revolution to the present day.

HIST 2010 SURVEY OF UNITED STATES HISTORY TO 1877 (3) LEC. 3. American history from the first humans in North America through the end of Reconstruction. Social, political and economic developments traced over centuries.

HIST 2017 HONORS SURVEY OF UNITED STATES HISTORY TO 1877 (3) LEC. 3. Pr., Honors College. Social, political, and economic development of United States from earliest occupation through Reconstruction.

HIST 2020 SURVEY OF UNITED STATES HISTORY SINCE 1877 (3) LEC. 3. History from the end of Reconstruction through the present. Social, political and economic developments are examined.

HIST 2070 SURVEY OF EUROPEAN HISTORY FROM THE RENAISSANCE TO 1789 (3) LEC. 3. Survey of European history from the first outbreak of the bubonic plague to the eve of the French Revolution.

HIST 2080 SURVEY OF EUROPEAN HISTORY FROM 1789 TO THE PRESENT (3) LEC. 3. European history from the French Revolution to the present.

HIST 2100 SURVEY OF LATIN AMERICAN HISTORY (3) LEC. 3. Latin American history from its Amerindian beginnings to the present. Both the Iberian and African backgrounds are explored.

HIST 2110 SURVEY OF ASIAN HISTORY (3) LEC. 3. Introduction to history, cultures and philosophies of peoples of Asia.

HIST 2120 SURVEY OF MODERN AFRICAN HISTORY (3) LEC. 3. Modern African history, from the end of the slave trade to the rise of nationalism and independence.

HIST 2130 SURVEY OF MIDDLE EASTERN HISTORY (3) LEC. 3. Introduction to the history and culture of the Middle East in the Islamic era.

HIST 3000 HISTORY OF SOUTHEASTERN INDIANS (3) LEC. 3. History of the southeastern Indians from pre-contact to removal including native culture, culture change, trade, Imperial rivalries and wars.

HIST 3010 HISTORY OF ALABAMA (3) LEC. 3. Broad study of Alabama history since its European settlement.

HIST 3020 HISTORY OF WOMEN IN THE UNITED STATES (3) LEC. 3. History of women in America from colonial period to the present; explores differences of region, race and class.

HIST 3030 AFRICAN AMERICAN HISTORY (3) LEC. 3. History of African Americans from African origins to the modern era, focusing on enslavement, emancipation and the struggle for equal rights.

HIST 3040 AMERICAN RELIGIOUS HISTORY (3) LEC. 3. Religious ideas and institutions from the colonial period to the present, including how religion has intersected with political and social history.

HIST 3050 HISTORY OF POLITICAL PARTIES IN THE UNITED STATES (3) LEC. 3. Examines political parties and party systems from the constitution to the present, including party organization, campaign techniques and presidential leadership.

HIST 3060 ISSUES IN AFRICAN AMERICAN HISTORY (3) LEC. 3. Issues and personalities in African American History. Course may be repeated for a maximum of 6 credit hours.

HIST 3070 HISTORY OF UNITED STATES AIR POWER (3) LEC. 3. Development of air and spacecraft as weapons of war including doctrines, technology, major leaders and great events of air power.

HIST 3080 THE CIVIL RIGHTS MOVEMENT (3) LEC. 3. History of the civil rights movement and its place in the broader African American struggle for freedom. Social, political, and cultural history, with geographic and chronological focus on the U.S. South in the Post-World War II period.

HIST 3090 HISTORY OF APPALACHIA (3) LEC. 3. Survey of the history of the Appalachian region from before European contact to the present.

HIST 3300 GRECO-ROMAN CIVILIZATION (3) LEC. 3. Classical civilizations of the Greeks and Romans as well as the Egyptian and Persian civilizations that influenced them.

HIST 3310 EUROPE IN THE MIDDLE AGES (3) LEC. 3. Survey of the thousand years which has been called the birth of Europe.

HIST 3320 HISTORY OF IRELAND (3) LEC. 3. History of Ireland from its beginnings to the present, including discussion of the present, troubled state of Ireland.

HIST 3330 ISSUES IN THE HISTORY OF GERMANY AND CENTRAL EUROPE (3) LEC. 3. Variable topics in the history of Germans, Slavs and other Central Europeans from the Era of Enlightened Absolutism through the fall of the Berlin Wall. Course may be repeated for a maximum of 6 credit hours.

HIST 3340 HISTORY OF MODERN FRANCE (3) LEC. 3. Political, social and cultural history of France since the French Revolution.

HIST 3350 SURVEY OF RUSSIAN HISTORY (3) LEC. 3. Russian history from the earliest development of a state in the area of Kiev down to the present Russian Federation.

HIST 3360 CONTEMPORARY RUSSIA SINCE WORLD WAR II (3) LEC. 3. Developments in contemporary Russia beginning with World War II and continuing to the present day.

HIST 3370 EUROPEAN IMAGINATION (3) LEC. 3. Examination of European domination of the globe through an investigation of how and why Europeans have imagined their civilization to be superior.

HIST 3500 HISTORY OF AVIATION (3) LEC. 3. History of aviation from the beginnings of human flight to the present.

HIST 3510 HISTORY OF SPACE TRAVEL (3) LEC. 3. Historical origins of the space age and U.S. space policy, including patterns that define the present and constrain the future of humans and machines.

HIST 3520 SCIENTIFIC REVOLUTIONS (3) LEC. 3. History of science, focusing on the concept of "scientific revolutions" in their social and intellectual context.

HIST 3530 SCIENCE FICTION AS INTELLECTUAL HISTORY (3) LEC. 3. The interaction between science, technology, and other aspects of modern culture as dramatized in classic and contemporary works of science fiction.

HIST 3540 ISSUES IN TECHNOLOGY AND CULTURE (3) LEC. 3. Issues such as the automobile, environment, industrialization and popular culture, relating to the role technology plays in society and culture. Course may be repeated for a maximum of 6 credit hours.

HIST 3550 AMERICAN ENVIRONMENTAL HISTORY (3) LEC. 3. Environmental history of U.S. from colonial era to present.

HIST 3560 TECHNOLOGY AND GENDER HISTORY (3) LEC. 3. Exploration of the relationship between gender and technology in comparative cultural, social, and historical perspectives from 18th century to present.

HIST 3570 THE AUTOMOBILE IN HISTORY (3) LEC. 3. Global history of the automobile, including technological developments as well as role of the automobile in culture.

HIST 3600 ISSUES IN WOMEN'S AND GENDER HISTORY (3) LEC. 3. Topics in the history of women and gender. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

HIST 3610 PRIVATE LIVES AND PUBLIC PLACES (3) LEC. 3. Examines shifting boundaries between public and private in history. Topics vary according to instructor, but may include work, family, sexuality and the state. Course may be repeated for a maximum of 6 credit hours.

HIST 3620 LANDSCAPE AND CULTURE (3) LEC. 3. Social and cultural history of architecture and built-space in Europe and/or the United States.

HIST 3630 HISTORY OF MEXICO (3) LEC. 3. History of Mexico in the 19th and 20th centuries.

HIST 3640 WORLD MILITARY HISTORY (3) LEC. 3. Economic, social, political and technological roots of the ways of war employed by different civilizations throughout the ages.

HIST 3650 20TH CENTURY WORLD WARS (3) LEC. 3. The causes, conduct and consequences of World Wars I and II.

HIST 3660 WORLD NAVAL HISTORY (3) LEC. 3. Naval history from its origins in ancient times to the present, including the evolution of strategy and tactics, foreign policy and technological change.

HIST 3670 CONTEMPORARY HISTORY (3) LEC. 3. Examination of issues and events in the contemporary world to provide historical background on developments in selected areas/nations across the globe.

HIST 3800 HISTORIAN'S CRAFT (3) LEC. 3. Historical research methods and an introduction to historiography. History major.

HIST 3920 HISTORY INTERNSHIP (3) LEC. 3. Supervised on-the-job experience at archives, historical museums, historic preservation authorities, historical editing projects, and similar historical agencies. Departmental approval.

HIST 3930 DIRECTED STUDIES (1-3) IND. Individual reading or research projects in a specific area of history. Departmental approval; 3.0 overall GPA. Course may be repeated for a maximum of 3 credit hours.

HIST 3970 SPECIAL TOPICS (3) LEC. 3. Topics vary. Course may be repeated for a maximum of 6 credit hours.

HIST 4950 SENIOR THESIS: HISTORICAL RESEARCH AND WRITING (3) LEC. 3. Pr., HIST 3800. With minimum grade of "C". Writing of an original paper based on research in primary source materials.

HIST 4967 HONORS SPECIAL PROBLEMS (3) LEC. 3. Pr., Honors College. The secondary literature on specialized topics in History.

HIST 4997 HONORS THESIS (3) LEC. 3. Pr., Honors College. Writing of an original paper based on research in primary materials.

HIST 5000 AMERICAN COLONIAL HISTORY (3) LEC. 3. Pr., HIST 3800., Or Departmental approval. Non-History Majors see department for prerequisite waiver. Traces the development of the North American colonies from European settlement to 1763.

HIST 5010 AMERICAN REVOLUTION AND EARLY NATION: 1763-1800 (3) LEC. 3. Pr., HIST 3800., Or Departmental approval. Non-History Majors see department for prerequisite waiver. Revolutionary era and the foundations of the United States including struggle with England, Declaration of Independence, Revolutionary War, Confederation, Constitution, and Federalist-Republican conflicts.

HIST 5020 EARLY AMERICAN REPUBLIC: 1800-1850 (3) LEC. 3. Pr., HIST 3800., Or Departmental approval. Non-History Majors see department for prerequisite waiver. Development of the early nation including Thomas Jefferson, War of 1812, Jacksonian democracy, Indian removal, Old South and slavery, westward movement and political party conflict.

HIST 5030 SOUTH TO 1877 (3) LEC. 3. Pr., HIST 3800., Or Departmental approval. Non-History Majors see department for prerequisite waiver. Development of the Old South, from southeastern Indians and European contact through Reconstruction including slavery, white social classes, women, and politics.

HIST 5040 CIVIL WAR ERA: 1850-1877 (3) LEC. 3. Pr., HIST 3800. Sectional conflict, Civil War, and Reconstruction including sectional differences, political crises, secession, Civil War campaigns, emancipation, and presidential and congressional Reconstruction. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5050 THE SOUTH SINCE 1877 (3) LEC. 3. Pr., HIST 3800. Examination of the South since 1877, with emphasis on social, economic, cultural, political and ideological developments. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5060 MAKING MODERN AMERICA: 1877-1929 (3) LEC. 3. Pr., HIST 3800. Development of the American economy, rise of big business, agrarian and labor protest, immigration, race relations, role of women, and role of government. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5070 MODERN UNITED STATES HISTORY: 1929 TO THE PRESENT (3) LEC. 3. Pr., HIST 3800. United States History since 1929 with particular emphasis on the economy, changing role of government, America's role in world affairs and social changes. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5080 20TH CENTURY UNITED STATES DIPLOMACY (3) LEC. 3. Pr., HIST 3080. Examination of United States diplomatic history since the Spanish-American War. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5300 EARLY MODERN EUROPE: 1348-1715 (3) LEC. 3. Pr., HIST 3800. Major topics in European history for the period 1348-1715 including religious and cultural change and the relationship between state and society. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5310 ENLIGHTENMENT/REVOLUTIONARY EUROPE: 1715-1815 (3) LEC. 3. Pr., HIST 3800. Culture, society and politics of the 18th Century; origins and consequences of the French Revolution; the Napoleonic period. Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5320 19TH CENTURY EUROPE: 1815-1918 (3) LEC. 3. Pr., HIST 3800. Cultural, economic and social developments as well as the politics and international relations of the major European states between 1815-1918. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5330 20TH CENTURY EUROPE (3) LEC. 3. Pr., HIST 3800. The history of Europe from the outbreak of World War I to the end of the Cold War. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5340 EUROPEAN CULTURAL AND INTELLECTUAL HISTORY (3) LEC. 3. Pr., HIST 3800. Development of European culture and the interfacing of culture, ideas, and social institutions from the early Enlightenment to the present. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5350 REVOLUTIONARY RUSSIA: 1861-1939 (3) LEC. 3. Pr., HIST 3800. Analysis of the Revolutions of 1917, beginning with emancipation of serfs and ending with purges of the 1930's. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5360 MEDIEVAL BRITISH HISTORY (3) LEC. 3. Pr., HIST 3800. British history from Roman period to advent of Tudor dynasty. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5370 EARLY MODERN BRITISH HISTORY (3) LEC. 3. Pr., HIST 3800. British history from 1485 to the early 18th century. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5380 MODERN BRITISH HISTORY (3) LEC. 3. British history from the political unification of England and Scotland to the present. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5500 THE GREAT TRANSFORMATION: THE INDUSTRIAL REVOLUTION (3) LEC. 3. Pr., HIST 3800. The Industrial Revolution of 18th, 19th and 20th centuries with a major focus on England and the United States with some treatment of Europe and Asia. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5580 THE HISTORY OF FLIGHT (3) LEC. 3. Pr., HIST 3800. The history of flight in political, economic, social, and cultural perspective. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5600 MODERN EAST ASIA (3) LEC. 3. Pr., HIST 3800. Histories, cultures and philosophies of China and Japan from 1800 to the present. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5610 COLONIAL LATIN AMERICA (3) LEC. 3. Pr., HIST 3800. European expansion into the western hemisphere from its Iberian background through the 19th century, fall of the Spanish and Portuguese empires. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5620 MODERN LATIN AMERICA (3) LEC. 3. Pr., HIST 3800. History of Latin America in the 19th and 20th centuries using a thematic approach arranged chronologically. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5640 ISLAM IN MODERN WORLD HISTORY (3) LEC. 3. Pr., HIST 3800. Study of adaptation of Islamic social and political theory to modern society and the modern state. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5650 HISTORY OF MODERN SOUTH ASIA (3) LEC. 3. Pr., HIST 3800. The making of Indo-Islamic culture, British rule of India, and the creation of Muslim Pakistan and "secular" India. Attention to role of individuals and events in history of nation-building. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5660 HISTORY OF MODERN CHINA: 1800-PRESENT (3) LEC. 3. Pr., HIST 3800. Examination and analysis of the political, social, economic, and intellectual changes in China from 1800-2000. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5670 HISTORY OF MODERN JAPAN: 1800-PRESENT (3) LEC. 3. Pr., HIST 3800. Examination and analysis of the political, social, economic, and intellectual changes in Japan from 1800-2000. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5680 AFRICA FROM 1800 TO PRESENT (3) LEC. 3. Pr., HIST 3800. Topics include state formation, ending of Atlantic slave trade and African slave trade and slavery, the rise and fall of colonial rule, and current problems facing independent countries. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5710 FUNDAMENTALS OF ARCHIVAL THEORY AND PRACTICE (3) LEC. 3. Pr., HIST 3800. Examines the fundamentals of archival theory and practice; the relationship between archives and records management; and the role of records and archives in society. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5810 FUNDAMENTALS OF PUBLIC HISTORY (3) LEC. 3. Pr., HIST 3800. Overview of the public history field in its diverse venues and manifestations. Students will consider the ways in which historians engage various publics and will undertake projects to help understand and experience how public historians carry out their work and responsibilities. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5820 HISTORIC PRESERVATION AND CULTURAL RESOURCE MANAGEMENT (3) LEC. 3. Pr., HIST 3800. Overview of historic preservation and cultural resource management. Students will explore the history of historic preservation in the United States and beyond, while examining current preservation issues within a broader historical and theoretical context. Considers modern preservation in terms of individuals, societies, and cultures and their relationships to the built environment and cultural landscape. Or Departmental approval. Non-History Majors see department for prerequisite waiver.

HIST 5970 SPECIAL TOPICS IN HISTORY (3) LEC. 3. Pr., HIST 3800. Topics vary. Or Departmental approval. Non-History Majors see department for prerequisite waiver. Course may be repeated for a maximum of 6 credit hours.

HIST 6000 AMERICAN COLONIAL HISTORY (3) LEC. 3. The development of the North American colonies from European settlement to 1763.

HIST 6010 AMERICAN REVOLUTION AND EARLY NATION: 1763-1800 (3) LEC. 3. The revolution and the foundations of the United States, including struggle with England, Declaration of Independence, Revolutionary War, Confederation, Constitution, and Federalist-Republican conflicts.

HIST 6020 EARLY AMERICAN REPUBLIC: 1800-1850 (3) LEC. 3. Development of the early nation including Thomas Jefferson, War of 1812, Jacksonian democracy, Indian removal, Old South and slavery, westward movement, and political party conflict.

HIST 6030 SOUTH TO 1877 (3) LEC. 3. Development of the Old South, from southeastern Indians and European contact through Reconstruction including slavery, white social classes, women and politics.

HIST 6040 CIVIL WAR ERA: 1850-1877 (3) LEC. 3. Sectional conflict, Civil War, and Reconstruction including sectional differences, political crises, secession, Civil War campaigns, emancipation, and presidential and congressional Reconstruction.

HIST 6050 THE SOUTH SINCE 1877 (3) LEC. 3. Examination of the South since 1877, with emphasis on social, economic, cultural, political and ideological developments.

HIST 6060 MAKING MODERN AMERICA: 1877-1929 (3) LEC. 3. Development of the American economy, rise of big business, agrarian and labor protest, immigration, race relations, role of women, and role of government.

HIST 6070 MODERN UNITED STATES HISTORY: 1929 TO THE PRESENT (3) LEC. 3. United States history since 1929 with particular emphasis on the economy, changing role of government, America's role in world affairs, and social changes.

HIST 6080 20TH CENTURY UNITED STATES DIPLOMACY (3) LEC. 3. Examination of United States diplomatic history since the Spanish-American War.

HIST 6300 EARLY MODERN EUROPE: 1348-1715 (3) LEC. 3. Major topics in European history for the period 1348-1715 including religious and cultural change and the relationship between state and society.

HIST 6310 ENLIGHTENMENT/REVOLUTIONARY EUROPE: 1715-1815 (3) LEC. 3. Culture, society and politics of the 18th Century; origins and consequences of the French Revolution; the Napoleonic period.

HIST 6320 19TH CENTURY EUROPE: 1815-1918 (3) LEC. 3. Examines cultural, economic and social developments as well as the politics and international relations of the major European states between 1815-1918.

HIST 6330 20TH CENTURY EUROPE (3) LEC. 3. The history of Europe from the outbreak of World War I to the end of the Cold War.

HIST 6340 EUROPEAN CULTURAL AND INTELLECTUAL HISTORY (3) LEC. 3. Development of European culture and the interfacing of culture, ideas, and social institutions from the early Enlightenment to the present.

HIST 6350 REVOLUTIONARY RUSSIA: 1861-1939 (3) LEC. 3. Analysis of the Revolutions of 1917, beginning with emancipation of serfs and ending with purges of the 1930s.

HIST 6360 MEDIEVAL BRITISH HISTORY (3) LEC. 3. British history from Roman period to advent of Tudor dynasty.

HIST 6370 EARLY MODERN BRITISH HISTORY (3) LEC. 3. British history from 1485 to the early 18th century.

HIST 6380 MODERN BRITISH HISTORY (3) LEC. 3. British history from the political unification of England and Scotland to the present.

HIST 6500 THE GREAT TRANSFORMATION: THE INDUSTRIAL REVOLUTION (3) LEC. 3. Explores the Industrial Revolution of 18th, 19th, and 20th centuries with a major focus on England and the United States and minor treatment of Europe and Asia.

HIST 6580 TOPICS IN THE HISTORY OF FLIGHT (3) LEC. 3. The history of flight in political, economic, social, and cultural perspective.

HIST 6600 MODERN EAST ASIA (3) LEC. 3. Histories, cultures, and philosophies of China and Japan from 1800 to the present.

HIST 6610 COLONIAL LATIN AMERICA (3) LEC. 3. European expansion into the western hemisphere from its Iberian background through 19th century fall of the Spanish and Portuguese empires.

HIST 6620 MODERN LATIN AMERICA (3) LEC. 3. History of Latin America in 19th and 20th centuries using a thematic approach arranged chronologically.

HIST 6640 ISLAM, STATE AND SOCIETY IN MODERN WORLD HISTORY (3) LEC. 3. Study of adaptation of Islamic social and political theory to modern society and the modern state.

HIST 6650 HISTORY OF MODERN SOUTH ASIA, 1750 TO PRESENT (3) LEC. 3. The making of Indo-Islamic culture, British rule of India, and the creation of Muslim Pakistan and "secular" India. Attention to role of individuals and events in history of nation-building.

HIST 6660 HISTORY OF MODERN CHINA: 1800-PRESENT (3) LEC. 3. Examination and analysis of the political, social, economic and intellectual changes in China from 1800-2000.

HIST 6670 HISTORY OF MODERN JAPAN: 1800-PRESENT (3) LEC. 3. Examination and analysis of the political, social, economic, and intellectual changes in Japan from 1800-2000.

HIST 6680 AFRICA FROM 1800 TO PRESENT (3) LEC. 3. Topics include state formation, ending of Atlantic slave trade and African slave trade and slavery, the rise and fall of colonial rule, and current problems facing independent countries.

HIST 6710 FUNDAMENTALS OF ARCHIVAL THEORY AND PRACTICE (3) LEC. 3. Examines the fundamentals of archival theory and practice; the relationship between archives and records management; and the role of records and archives in society.

HIST 6810 FUNDAMENTALS OF PUBLIC HISTORY (3) LEC. 3. Overview of the public history field in its diverse venues and manifestations. Students will consider the ways in which historians engage various publics and will undertake projects to help understand and experience how public historians carry out their work and responsibilities.

HIST 6820 HISTORIC PRESERVATION AND CULTURAL RESOURCE MANAGEMENT (3) LEC. 398. Students will explore the history of historic preservation in the United States and beyond, while examining current preservation issues within a broader historical and theoretical context. Considers modern preservation in terms of individuals, societies, and cultures and their relationships to the built environment and cultural landscape.

HIST 6970 SPECIAL TOPICS IN HISTORY (3) LEC. 3. Topics vary. Course may be repeated for a maximum of 6 credit hours.

HIST 7100 INTRODUCTORY SEMINAR IN AMERICAN HISTORIOGRAPHY (3) SEM. 3. Major historiographical trends in general American history and in particular sub-fields.

HIST 7110 SEMINAR IN AMERICAN COLONIAL HISTORY (3) SEM. 3. Development of the British North American colonies, including Indians, English background, exploration, settlement, rebellions, religion, slavery, imperial rivalries and women.

HIST 7120 SEMINAR IN AMERICAN REVOLUTION AND EARLY NATION (3) SEM. 3. Birth of the American nation and its re-birth under the Constitution.

HIST 7130 SEMINAR IN EARLY AMERICAN REPUBLIC (3) SEM. 3. Issues in the Early Republic, including political transformations, sectional conflict, women and gender roles, industrialization, and reform movements.

HIST 7140 SEMINAR IN OLD SOUTH (3) SEM. 3. History of the Old South, including colonial settlement, slavery, political transformations, sectional conflict, women and gender roles and religion.

HIST 7150 SEMINAR IN CIVIL WAR ERA (3) SEM. 3. Examines sectional conflict, Civil War, and Reconstruction, including political, military and social development.

HIST 7160 SEMINAR IN NEW SOUTH (3) SEM. 3. Examines the South in United States history since 1877.

HIST 7170 SEMINAR IN UNITED STATES PROGRESSIVE ERA (3) SEM. 3. Examines in depth the history of the United States between 1877 - 1929.

HIST 7180 SEMINAR IN MODERN UNITED STATES HISTORY (3) LEC. 3. A broad introduction to the historiography relating to United States history since 1929.

HIST 7190 SEMINAR IN AFRICAN AMERICAN HISTORY (3) SEM. 3. Analysis of the major historiographical works on the social, political and economic history of African Americans.

HIST 7200 SEMINAR IN UNITED STATES WOMEN'S HISTORY (3) SEM. 3. Change and continuity in the lives of American women.

HIST 7210 SEMINAR IN AMERICAN RELIGIOUS HISTORY (3) SEM. 3. The role of religion in American history; recent writing on religion; and sociological and anthropological theories on religion.

HIST 7220 DEVELOPMENT IN CIVIL RIGHTS MOVEMENT (3) LEC. 3. In-depth study of the civil rights movement, with emphasis on the U.S. South in the post-World War II period. Major topics, basic literature, and historiographical debates examined.

HIST 7400 INTRODUCTORY SEMINAR IN EUROPEAN HISTORIOGRAPHY (3) SEM. 3. Major topics and historiographical debates in European history from the early modern period to the twentieth century.

HIST 7410 SEMINAR IN EARLY MODERN EUROPE (3) SEM. 3. Topics in the history of continental Europe, 1348-1715, including religious and cultural change and the relationship between state and society.

HIST 7420 SEMINAR IN POPULAR CULTURE IN EARLY MODERN EUROPE (3) SEM. 3. Major themes in the popular culture of early modern Europe, 1450-1800.

HIST 7430 SEMINAR IN RUSSIAN SOCIETY IN REVOLUTION (3) SEM. 3. Examination of the literature, concepts, and history of the transformation of Russian society between 1861 and 1939.

HIST 7440 SEMINAR IN MODERN EUROPEAN CULTURAL POLITICS (3) SEM. 3. Traditional and revisionist approaches to the study of the political uses of culture in nineteenth and twentieth century Europe.

HIST 7450 SEMINAR IN THE FRENCH REVOLUTION (3) SEM. 3. The historiography in the French Revolution's origins and legacy.

HIST 7460 SEMINAR IN EARLY MODERN BRITAIN (3) SEM. 3. Main themes and events of British history between 1603 and the 1760's.

HIST 7470 SEMINAR IN EUROPEAN INTERNATIONAL HISTORY (3) SEM. 3. Relations among the European powers in the period 1870-1945.

HIST 7510 INTRODUCTORY SEMINAR IN HISTORIOGRAPHY OF TECHNOLOGY (3) SEM. 3. Problems and issues in the history of technology, as well as key literature on the subject.

HIST 7520 SEMINAR IN POLITICS AND TECHNOLOGY IN THE SPACE AGE (3) SEM. 3. The political and technological context of the "space age."

HIST 7530 SEMINAR IN SOUTHERN INDUSTRIALIZATION (3) SEM. 3. Significant scholarly works and primary sources dealing with the history of industrialization and technology in the American South.

HIST 7540 SEMINAR IN AEROSPACE HISTORY (3) SEM. 3. Central problems, issues, and literature in aerospace history.

HIST 7550 SEMINAR IN SCIENCE AND SOCIETY (3) SEM. 3. Exploration of the interactions between science and politics in the twentieth century.

HIST 7560 SEMINAR IN THE INDUSTRIAL REVOLUTION (3) SEM. 3. Examines the central questions and historiography relating to the industrial revolution.

HIST 7570 TECHNOLOGY IN SOCIAL AND CULTURAL HISTORY (3) SEM. 3. Explore the literature in the history of technology that approaches the field from a social and cultural perspective.

HIST 7630 SEMINAR IN LATIN AMERICAN HISTORY (3) SEM. 3. Research tools, major issues, and sources in Latin American history.

HIST 7690 SEMINAR IN MODERN WORLD HISTORY (3) SEM. 3. Examination of world historiography and theory, with topical readings on comparative themes such as imperialism and colonialism, catch-up industrialization, decolonization, the Atlantic world, gender systems, religious diasporas, trade, and exploration.

HIST 7700 SEMINAR IN HISTORICAL METHODS (3) SEM. 3. Methodology and theory of historical research; preparation of a significant original research paper.

HIST 7720 SEMINAR IN ARCHIVAL THEORY AND PRACTICE (3) SEM. 3. Pr., HIST 5710 or HIST 6710. Development of archival theory in the major functional areas of archival practice: appraisal, acquisition, arrangement, description, preservation, reference and access, outreach and advocacy.

HIST 7730 SEMINAR IN THE HISTORY OF RECORDS AND ARCHIVES (3) SEM. 3. Pr., HIST 5710 or HIST 6710. Origins, organization, and development of records, record keeping systems, and archival institutions in Europe and North America.

HIST 7800 RESEARCH SEMINAR IN UNITED STATES HISTORY TO 1865 (3) SEM. 3. Research and writing of an original paper based on primary sources that should be of publishable or near publishable quality. Course may be repeated for a maximum of 6 credit hours.

HIST 7810 RESEARCH SEMINAR IN UNITED STATES HISTORY SINCE 1865 (3) SEM. 3. Research and writing of an original paper based on primary sources that should be of publishable or near publishable quality. Course may be repeated for a maximum of 6 credit hours.

HIST 7820 RESEARCH SEMINAR IN EARLY MODERN EUROPEAN HISTORY (3) SEM. 3. Research and writing of an original paper based on primary sources that should be of publishable or near-publishable quality. Course may be repeated for a maximum of 6 credit hours.

HIST 7830 RESEARCH SEMINAR IN MODERN EUROPEAN HISTORY (3) SEM. 3. Research and writing of an original paper based on primary sources that should be of publishable or near-publishable quality. Course may be repeated for a maximum of 6 credit hours.

HIST 7840 RESEARCH SEMINAR IN HISTORY OF TECHNOLOGY (3) SEM. 3. Research and writing of an original paper based on primary sources that should be of publishable or near-publishable quality. Course may be repeated for a maximum of 6 credit hours.

HIST 7850 RESEARCH SEMINAR IN LATIN AMERICAN HISTORY (3) SEM. 3. Research and writing of an original paper based on primary sources that should be of publishable or near-publishable quality. Course may be repeated for a maximum of 6 credit hours.

HIST 7910 PUBLIC HISTORY INTERNSHIP (3) PRA. 3. Pr., HIST 6810 and P/C, HIST 7700. Apply principles of public history practice within a functioning venue/site under supervision of professional public historian, including final written report. Course may be repeated for a maximum of 6 credit hours.

HIST 7920 ARCHIVAL INTERNSHIP (1-6) INT. Pr., HIST 6710. Opportunity to apply the principles of archival practice within the context of a functioning archival repository under the supervision of professional archivists. Or departmental approval. Course may be repeated for a maximum of 6 credit hours.

HIST 7970 SPECIAL TOPICS IN HISTORY (3) LEC. 3. Topics vary. Course may be repeated for a maximum of 9 credit hours.

HIST 7990 RESEARCH AND THESIS (1-10) MST. Research and writing of the M.A. thesis. Course may be repeated with change in topic.

HIST 8000 READING COURSE IN AMERICAN HISTORY TO 1877 (3) PRL. 3. Selected topics in American History to 1877. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

HIST 8010 READING COURSE IN AMERICAN HISTORY SINCE 1877 (3) PRL. 3. Selected topics in American History since 1877. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

HIST 8300 READING COURSE IN EUROPEAN HISTORY TO 1815 (3) PRL. 3. Selected topics in European History to 1815. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

HIST 8310 READING COURSE IN EUROPEAN HISTORY SINCE 1815 (3) PRL. 3. Selected topics in European History since 1815. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

HIST 8500 READING COURSE IN THE HISTORY OF TECHNOLOGY (3) PRL. 3. Selected topics in the History of Technology. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

HIST 8600 READING COURSE IN LATIN AMERICAN HISTORY (3) PRL. 3. Selected topics in Latin American History. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

HIST 8610 READING COURSE IN WORLD HISTORY (3) LEC. 3. Directed readings in modern world history, focusing on one or two geographic areas or themes.

HIST 8700 HISTORIOGRAPHY AND THEORY OF HISTORY (3) SEM. 3. Explores the nature of history by tracing changing conceptions of historical thought and practice from their origins to the present.

HIST 8710 INTRODUCTION TO THE TEACHING OF HISTORY (1) SEM. 1. SU. Introduction to some of the basic challenges involved in teaching History at the college level.

HIST 8990 RESEARCH AND DISSERTATION (1-10) DSR. Research and writing of the Ph.D. dissertation. Course may be repeated with change in topics.

Honor - HONR

Courses

HONR 1007 HONORS TECHNOLOGY AND CULTURE I (3) LEC. 3. Pr., Honors Interdisciplinary Track or Honor's College Participant. From an interdisciplinary perspective, this course examines the intersections of technology & technology & culture in a variety of social, historical, professional, and global setting.

HONR 1017 HONORS TECHNOLOGY AND CULTURE II (3) LEC. 3. Pr., Honors Interdisciplinary Track or Honor's College Participant. From an interdisciplinary perspective, this course examines the intersections of technology & technology & culture in a variety of social, historical, professional, and global settings.

HONR 1027 HONORS SUSTAINABILITY AND THE MODERN WORLD I (3) LEC. 3. Pr., Honors Interdisciplinary Track or Honor's College Participant. Interdisciplinary exploration into concept of sustainability as theory and practice

HONR 1037 HONORS SUSTAINABILITY AND THE MODERN WORLD II (3) LEC. 3. Pr., Honors Interdisciplinary Track or Honor's College Participant. Interdisciplinary exploration into concept of sustainability as theory and practice.

HONR 1077 HONORS FRESHMAN EXPLORATION (1) LEC. 1. SU. Pr., Honors College. Honors Interdisciplinary Track or Honor's College Participant. Colloquium that introduces new Honors College students to the College and helps students become better informed about its resources and services.

HONR 1087 HONORS LYCEUM (1) LEC. 1. SU. Pr., Honors Interdisciplinary Track or Honor's College Participant. Weekly academic lectures followed by discussion and interaction. Course may be repeated for a maximum of 2 credit hours.

HONR 1097 HONORS FORUM FOR FRESHMEN (1) LEC. 1. SU. Pr., Honors Interdisciplinary Track or Honor's College Participant. Attendance at co-curricular events held in and around the Auburn campus.

HONR 2087 HONORS BOOK CLUB (1) LEC. 1. SU. Pr., Honors College. Honors Interdisciplinary Track or Honor's College Participant. Moderated discussions of significant ideas found in recent renowned books. Each discussion group is led by an experienced teacher or university leader. Course may be repeated for a maximum of 2 credit hours.

HONR 2097 HONORS FORUM FOR SOPHOMORES (1) LEC. 1. SU. Pr., Honors Interdisciplinary Track or Honor's College Participant. Attendance at co-curricular events held in and around the Auburn campus.

HONR 2717 HONORS HUMAN ODYSSEY 1 (3) LEC. 3. Pr., Honors Interdisciplinary Track or Honor's College Participant. Examines the human endeavor from pre-history through the 18th century by exploring connections between the sciences and humanities.

HONR 2727 HONORS HUMAN ODYSSEY LL (3) LEC. 3. Pr., Honors Interdisciplinary Track or Honor's College Participant. Examines the human endeavor from pre-history from the 18th century to the present by exploring connections between the sciences and humanities.

HONR 3007 HONORS SEMINAR (3) AAB/SEM. 3. Pr., Honors Interdisciplinary Track or Honor's College Participant. In fulfillment of the Honors Apogee, this seminar involves critical reading and research in advanced topics having both intra- and interdisciplinary implications and applications. Or departmental approval. Course may be repeated for a maximum of 6 credit hours.

HONR 3087 HONORS COLLEGE STUDY & TRAVEL (1-3) LEC. Pr., Honors College. Concentrated study in US or abroad. Course may be repeated for a maximum of 3 credit hours.

HONR 3097 HONORS FORUM FOR JUNIORS (1) LEC. 1. SU. Pr., Honors Interdisciplinary Track or Honor's College Participant. Attendance at co-curricular events held in and around the Auburn campus.

HONR 4007 HONORS APOGEE PROJECT (3) IND. 3. Pr., Honors Interdisciplinary Track or Honor's College Participant. Advanced directed study, usually based in a student's undergraduate research, leading to the completion of an Honors Apogee Experience, the capstone of the Honors College. Course may be repeated for a maximum of 6 credit hours.

HONR 4097 HONORS FORUM FOR SENIORS (1) LEC. 1. SU. Pr., Honors Interdisciplinary Track or Honor's College Participant. Attendance at co-curricular events held in and around the Auburn campus.

Horticulture - HORT

Courses

HORT 1010 INTRODUCTION TO HORTICULTURE (1) LEC. 1. Introduces scientific and practical aspects of pomology, olericulture, floriculture and landscape horticulture. Also presents the broad scope of career opportunities in the field of horticultural science. Fall.

HORT 2010 FRUIT AND NUT PRODUCTION (4) LEC. 3. LAB. 3. Introductory course in cultural practices and economics associated with commercial fruit and nut production. Fall.

HORT 2020 HORTICULTURE CROP PRODUCTION (3) LEC. 2. LAB. 3. Pr., BIOL 1010 or BIOL 1030 or BIOL 1037. Techniques of plant propagation and cultural methods for successful fruit and vegetable production. Fall.

HORT 2030 VEGETABLE PRODUCTION (3) LEC. 3. Principles, practices, establishment, production, maintenance, harvesting, storage and marketing of commercial vegetable crops.

HORT 2040/2043 ORGANIC GARDENING (3) LEC. 3. Principles, production practices, maintenance, harvesting and marketing of organically and traditionally home-grown vegetables.

HORT 2050 FOOD FOR THOUGHT (3) LEC. 3. Study of history of food plants, including their impact on world culture, variety of uses, economic botany, production systems, and impact on societies. Fall.

HORT 2210 LANDSCAPE GARDENING (4) LEC. 2. LAB. 4. Principles of landscape gardening applied to residential and small-scale commercial grounds. Involves plant identification and use, basic landscape design, and landscape installation and management concepts. Summer and Fall.

HORT 2240 PLANT PROPAGATION (3) LEC. 2. LAB. 3. Pr., P/C, BIOL 1030 or BIOL 1037. Basic principles and practices involved in the propagation of horticulture plants. Departmental approval. Fall and Spring.

HORT 2250 INTERIOR PLANTS AND FLORAL DESIGN (3) LEC. 2. LAB. 2. Basic principles, practices and design with foliage plants and flowers in the interior setting. Summer and Fall.

HORT 3000 GROWTH AND DEVELOPMENT OF HORTICULTURAL PLANTS (3) LEC. 3. Pr., (BIOL 1030 or BIOL 1037) and CHEM 1030. Growth and development of plants with concepts applied to the practice of Horticultural Science. Summer and Fall.

HORT 3110 PLANTS AND PEOPLE: A HISTORY OF GARDENS IN CULTURAL CONTEXT (3) LEC. 3. Heritage and traditions influencing the development of public and private garden styles, context, and function including cultural expressions, plant use, and impact of noted designers and horticulturists throughout history.

HORT 3210 SMALL TREES, SHRUBS AND VINES (4) LEC. 2. LAB. 6. Pr., (BIOL 1020 or BIOL 1027) and (BIOL 1030 or BIOL 1037). Identification, culture and landscape use of small trees, shrubs and vines. Spring and Summer.

HORT 3220 ARBORICULTURE (4) LEC. 2. LAB. 6. Pr., BIOL 1030 or BIOL 1037. Identification, culture and use of ornamental trees in landscape plantings. Departmental approval. Fall.

HORT 3280 LANDSCAPE CONSTRUCTION (3) LEC. 3. LAB. 4. Principles and practices used in the interpretation and implementation of landscape construction and planting plans. Fall.

HORT 3800 CAREERS IN HORTICULTURE (1) LEC. 1. SU. Current developments and career opportunities in horticulture. Fall.

HORT 3840 STUDY/TRAVEL IN HORTICULTURE (1-10) AAB/FLD. Study of horticultural or fruit and vegetable science, landscape design, nursery and greenhouse management in U.S. or international location. Course may be repeated for a maximum of 10 credit hours.

HORT 3920 HORTICULTURE INTERNSHIP (4) INT. 4. Practical on-the-job training for selected commercial horticultural companies. Course may be repeated for a maximum of 8 credit hours.

HORT 3950 CAREERS IN HORTICULTURE (1) LEC. 1. SU. Current developments and career opportunities in horticulture. Fall.

HORT 4000 PESTICIDE MGT IN HORT (3) LEC. 3. Pr., ENTM 4020 and PLPA 3000. Proper management of pesticides in horticulture; decision making skills in relation to control strategies; environmental issues relevant to horticulture; safety considerations; scouting and application techniques. Fall.

HORT 4100 HERBACEOUS ORNAMENTALS (4) LEC. 2. LAB. 4. Pr., (BIOL 1020 or BIOL 1027) and (BIOL 1030 or BIOL 1037). Identification, culture, and use of herbaceous annuals and perennials, bulbs, herbs, and ornamental grasses. Consideration of flower bed and border preparation, care and maintenance. Spring and Summer.

HORT 4150 RETAIL GARDEN CENTER MANAGEMENT (3) LEC. 3. LAB. 4. Pr., HORT 3210 or HORT 3220. The following objectives will be covered: financing, location, design, stocking, selling, personnel management, advertising and maintaining plants. Summer.

HORT 4250 INTERMEDIATE FRUIT & VEG PROD (3) LEC. 3. Pr., HORT 2040 or HORT 2030. Intermediate horticulture course in which students apply knowledge gained in the classroom to hands-on fruit and vegetable gardening practices.

HORT 4270 INTERMEDIATE LANDSCAPE DESIGN (3) LEC. 2. LAB. 4. Pr., HORT 3210 or HORT 3220 or HORT 4100. Human nature, art and technology and their influence on landscape design.

HORT 4280 ADVANCED LANDSCAPE DESIGN (3) LEC. 1. LAB. 4. Pr., HORT 4270. Continuation of HORT 4270 with an emphasis on design projects. Fall.

HORT 4300 COMP AIDED PLANTING DESIGN (3) LEC. 3. Graphic concepts relating to spatial visualization and communication and project cost estimation using computer aided drafting and project management software developed for landscape professionals. Spring.

HORT 4930 DIRECTED STUDIES (1-3) AAB/IND. Directed Studies related to research, teaching or outreach educational programs in Horticulture. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

HORT 4967 HONORS SPECIAL PROBLEMS (1-3) LEC. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

HORT 4970 SPECIAL TOPICS (3) IND. 3. Principles, methods and techniques for understanding various horticultural disciplines. Course may be repeated for a maximum of 6 credit hours.

HORT 4980 UNDERGRADUATE RESEARCH (2-4) IND. Directed research in the area of specialty within the department. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

HORT 4997 HONORS THESIS (1-3) LEC. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

HORT 5110 TREE FRUIT CULTURE (2) LEC. 2. Pr., HORT 3000. Manipulation of growth and development of tree fruit crops by cultural methods. Departmental approval. Summer, odd years.

HORT 5120 SMALL FRUIT AND PECAN CULTURE (3) LEC. 2. LAB. 2. Pr., BIOL 3100 and BIOL 3101. Principles and practices involved in the production and marketing of small fruits and pecans. Departmental approval. Spring.

HORT 5130 SUSTAINABLE VEGETABLE CROP PRODUCTION (3) LEC. 2. LAB. 3. Pr., (BIOL 1030 or BIOL 1037) and HORT 3000. Best management practices and quality of vegetable crops. Departmental approval. Spring.

HORT 5140 POST-HARVEST BIOLOGY AND TECHNOLOGY (3) LEC. 2. LAB. 3. Pr., PLPA 3000 and HORT 3000. Physiological changes occurring in fruits, vegetables and other horticultural products after harvest. Departmental approval. Spring.

HORT 5210 LANDSCAPE BIDDING, INSTALLATION AND MAINTENANCE (4) LEC. 3. LAB. 3. Pr., AGRN 2040 and PLPA 3000. Principles and practices of the bidding, installation and maintenance of commercial and residential landscapes. Spring.

HORT 5220 GREENHOUSE MANAGEMENT SCIENCE (4) LEC. 3. LAB. 2. Pr., HORT 3000 and CHEM 1030 and HORT 2240 and AGRN 2040. Management, culture and economics of commercial greenhouse production. Fall.

HORT 5230 NURSERY MANAGEMENT (4) LEC. 3. LAB. 4. Pr., HORT 2240 and HORT 3000. Factors affecting plant production. Environmental issues related to facilities design and pesticide and nutrient management. Departmental approval. Fall.

HORT 5280 ADVANCED LANDSCAPE DESIGN (3) LEC. 5. Pr., HORT 4270. Continuation of HORT 4270 with an emphasis on design projects. Departmental approval.

HORT 5910 HORTICULTURE PRACTICUM (4) LEC. 1. LAB. 6. Practical application of a broad range of horticultural subject-matter knowledge and skills. May count either HORT 5910 or HORT 6910. Course may be repeated for a maximum of 8 credit hours.

HORT 6110 TREE FRUIT CULTURE (2) LEC. 2. Pr., HORT 3000. Manipulation of growth and development of tree fruit crops by cultural methods. Departmental approval. Summer, odd years.

HORT 6120 SMALL FRUIT AND PECAN CULTURE (3) LEC. 2. LAB. 2. Pr., BIOL 3100 and BIOL 3101. Principles and practices involved in the production and marketing of small fruits and pecans. Departmental approval. Spring, even years.

HORT 6130 SUSTAINABLE VEGETABLE CROP PRODUCTION (3) LEC. 2. LAB. 2. Pr., HORT 3000. Advanced course in best management practices and quality of vegetable crops. Departmental approval. Spring.

HORT 6140 POST-HARVEST BIOLOGY AND TECHNOLOGY (3) LEC. 2. LAB. 2. Pr., PLPA 3000 and HORT 3000. Physiological changes occurring in fruits, vegetables and other horticultural products after harvest. Spring.

HORT 6210 LANDSCAPE BIDDING, INSTALLATION AND MAINTENANCE (4) LEC. 3. LAB. 3. Pr., AGRN 2040 and PLPA 3000. Principles and practices of the bidding, installation and maintenance of commercial and residential landscapes. Spring.

HORT 6220 GREENHOUSE MANAGEMENT SCIENCE (4) LEC. 3. LAB. 2. Pr., HORT 3000 and CHEM 1030 and HORT 2240 and AGRN 2040. Management, culture and economics of commercial greenhouse production. Fall.

HORT 6230 NURSERY MANAGEMENT (4) LEC. 3. LAB. 4. Pr., HORT 2240 and HORT 3000. Factors affecting plant production. Environmental issues related to facilities design and pesticide and nutrient management. Departmental approval. Fall.

HORT 6280 ADVANCED LANDSCAPE DESIGN (3) LEC. 5. Pr., HORT 4270. Continuation of HORT 4270 with an emphasis on design projects. Departmental approval.

HORT 6910 HORTICULTURE PRACTICUM (4) LEC. 1. LAB. 6. Practical application of a broad range of horticultural subject-matter knowledge and skills. May count either HORT 5910 or HORT 6910. Course may be repeated for a maximum of 8 credit hours.

HORT 7010 EXPERIMENTAL METHODS IN HORTICULTURE (4) LEC. 2. LAB. 3. Coreq., STAT 7000. Principles and methodologies of horticultural research, experimental design, preparation of project and grant proposals, and development of publication skills. Departmental approval. Fall.

HORT 7040 ADVANCED GROWTH AND DEVELOPMENT OF HORTICULTURAL PLANTS (3) LEC. 3. Pr., (HORT 3000 or BIOL 3100) and BIOL 3101. Plant growth and development from seed germination, through maturity and senescence. Summer, even years.

HORT 7050 NUTRITIONAL REQUIREMENTS OF HORTICULTURAL PLANTS (3) LEC. 3. LAB. 2. Pr., HORT 3000. Nutritional requirements of horticulture crops and factors affecting these requirements. Departmental approval. Summer, odd years.

HORT 7070 PLANT BIOTECHNOLOGY (4) LEC. 2. LAB. 3. Pr., BIOL 3000. Plant biotechnology, including plant tissue culture technologies and genetic transformation and applications to horticultural crop improvement. Departmental approval. Spring, odd years.

HORT 7080 ENVIRONMENTAL PLANT STRESS (3) LEC. 4. Pr., HORT 3000. Mechanisms related to adaptation of plants to environmental stresses. Departmental approval.

HORT 7840 GRADUATE STUDY/TRAVEL IN HORTICULTURE (1-4) LEC. Programmed activities to enhance national/international awareness and enable students to understand horticultural practices in diverse areas. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

HORT 7850 URBAN FORESTRY SEMINAR (1) LEC. 3. SU. Presentation and discussion of research, scientific papers and issues related to urban forestry establishment, care and planning. Credit will not be given for HORT 7850 and FORY 7850.

HORT 7920 GRADUATE INTERNSHIP (1-4) INT. Supervised professional experience in horticulture. Departmental approval.

HORT 7950 SEMINAR (1) SEM. SU. Graduate students are required to attend all seminars. Course may be repeated with change in topics.

HORT 7960 SPECIAL PROBLEMS (1-3) IND. 3. Conferences, problems and assigned readings in horticulture. Course may be repeated for a maximum of 6 credit hours.

HORT 7970 SPECIAL TOPICS IN HORTICULTURE (1-3) LEC. Principles, methods and techniques involved in gaining an understanding of different horticultural disciplines. Course may be repeated for a maximum of 3 credit hours.

HORT 7990 RESEARCH AND THESIS (1-10) MST. Course may be repeated with change in topics.

HORT 8990 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with change in topics.

Hotel & Restaurant Mgt - HRMT

Courses

HRMT 1010 INTRODUCTION TO HOSPITALITY MANAGEMENT (2) LEC. 2. Overview of the hotel, restaurant, club, and travel industries and their interaction.

HRMT 2300 HOSPITALITY LAW (3) LEC. Pr., (HRMT 1010 or NUFS 1010).Legal systems and laws relevant to the management of restaurants, hotels, private clubs and other hospitality operations. Spring.

HRMT 2400 FOOD PRODUCTION IN HOSPITALITY (4) LEC. 3. LAB. 3. Pr., HRMT 1010 and (NTRI 2000 or NTRI 2007) and BIOL 1000.Skills, competencies and knowledge to manage a variety of food production and service facilities. Fall, Spring.

HRMT 2500 LODGING OPERATIONS (2) LEC. 2. Pr., HRMT 1010.Lodging operations management, with emphasis on guest cycle.

HRMT 2910 HOSPITALITY PRACTICUM (1) PRA. 3. Pr., HRMT 1010.Rotational perspective on the management and operation of the Auburn University Hotel and Conference Center. Departmental approval.

HRMT 2940 PROFESSIONAL DEVELOPMENT IN HOSPITALITY (1) LEC. 1. Pr., HRMT 1010.Departmental approval. Job-seeking and career development skills, based upon individual needs. Departmental approval.

HRMT 3200 HOSPITALITY FINANCIAL MANAGEMENT (3) LEC. 3. Pr., (ACCT 2810 or ACCT 2110) and HRMT 1010.Financial systems and statements in the hospitality industry. Spring.

HRMT 3400 HOSPITALITY MARKETING (3) LEC. 3. Pr., HRMT 1010 and (P/C, MKTG 3310 or P/C, MKTG 3810).Service marketing concepts and issues as applied to the global hospitality industry. Fall.

HRMT 3800 HOSPITALITY INFORMATION TECHNOLOGY (3) LEC. 3. Pr., HRMT 2400 and HRMT 2500.Strategic and operational issues surrounding introduction of technology in hospitality. Spring.

HRMT 4200 HOSPITALITY FACILITIES MANAGEMENT (3) LEC. 3. Pr., HRMT 2400 and HRMT 2500.Departmental approval. Design and operation of hospitality facilities. Fall.

HRMT 4300 FOOD AND BEVERAGE MANAGEMENT (3) LEC. 3. Pr., HRMT 2400 and (MNGT 3810 or MNGT 3100).Control system design, implementation, and management in food and beverage operations. Fall.

HRMT 4350 ADVANCED RESTAURANT MANAGEMENT (3) LEC. 3. Pr., HRMT 2400 and HRMT 4300.Advanced concepts and managerial issues of restaurant management.

HRMT 4500 STRATEGIC HOSPITALITY MANAGEMENT (3) LEC. 3. Pr., HRMT 1010 and MNGT 3100 or MNGT 3810.Development and implementation of strategic management in hospitality. Spring.

HRMT 4600 BEVERAGE APPRECIATION (3) LEC. 3. Departmental approval. Production, selection, service, and sensory evaluation of alcoholic and non-alcoholic beverages. Must be 21 years of age.

HRMT 4800 SENIOR LECTURE SERIES (1) LEC. 1. SU. Successful leaders share their experiences with career development, industry related topics and issues, successful management strategies and leadership. Spring. Departmental approval.

HRMT 4920 INTERNSHIP IN HOSPITALITY (4) INT. 4. Pr., HRMT 2910.HRMT major, 2.2 cumulative gpa. 600 hours (during collegiate experience) work experience in hospitality. Application of principles and theories of hospitality in a professional hospitality setting.

HRMT 5460 CATERING AND EVENT MANAGEMENT (1) LEC. 1. Pr., HRMT 1010.Management and organization techniques employed in the catering and special events industry. May count either HRMT 5460 or HRMT 6460. Departmental approval.

HRMT 5461 CATERING AND EVENT MANAGEMENT (2) LAB. 4. Pr., HRMT 1010 and HRMT 5460. Provide students with a practical experience in the planning, coordinating and execution of TE Hospitality GALA and to provide a forum for students whereby they work alongside industry professionals. May count either HRMT 5460 or HRMT 6460. Departmental approval.

HRMT 5530 SCIENCE OF QUALITY SERVICE IN HOSPITALITY (3) LEC. 3. Pr., HRMT 2400 and HRMT 2500. Role of quality service in attaining and retaining customers with emphasis on organizational strategic mission. May count HRMT 5530 or 6530/6536. Spring.

HRMT 5540 CONFERENCE COORDINATION (3) LEC. 3. Pr., HRMT 1010., Or departmental approval. Systems for managing conference coordination. May count HRMT 5540 or 6540/6546. Fall.

HRMT 5550 CLUB MANAGEMENT (3) LEC. 3. Pr., HRMT 2400 and HRMT 2500. Examination of unique features, opportunities and problems associated with club management. Credit will not be given for HRMT 5550 and HRMT 6550/6556.

HRMT 5570 GLOBAL HOSPITALITY (3) LEC. 3. Pr., MNGT 3100 or MNGT 3810., Or departmental approval. Contemporary issues confronting the global hospitality industry. Management and marketing operations emphasized. Credit will not be given for HRMT 5570 and HRMT 6570/6576. Spring.

HRMT 5590 RECREATIONAL FOOD SERVICE MANAGEMENT (3) LEC. 3. Pr., HRMT 2400., Or departmental approval. Methods and systems of managing foodservice operations recreational facilities. Credit is not allowed for both HRMT 5590 and HRMT 6590/6596.

HRMT 6460 CATERING AND EVENT MANAGEMENT (1) LEC. 1. Exploring advanced management topics in catering and event planning including risk, liability, crisis and other challenges faced by the industry. Departmental approval.

HRMT 6461 CATERING AND EVENT MANAGEMENT (2) LAB. 4. Pr., HRMT 6460. Provides students with a leadership practical experience in the planning, coordinating and execution of The Hospitality GALA and to provide a forum whereby they work alongside industry professionals. Departmental approval.

HRMT 6530/6536 SCIENCE OF QUALITY SERVICE IN HOSPITALITY (3) LEC. 3. Or departmental approval. This course introduces students to the important role that quality service plays in attaining and retaining customers in the pursuit of an organizations strategic mission. Credit will not be given for HRMT 6530/6536 and HRMT 5530.

HRMT 6540/6546 CONFERENCE COORDINATION (3) LEC. 3. Systems for the management of the conference coordination segment of the hospitality industry. Credit will not be given for HRMT 6540/6546 and HRMT 5540. Departmental approval.

HRMT 6550/6556 CLUB MANAGEMENT (3) LEC. 3. Unique features, opportunities, and problems associated with resort and club management. Credit will not be given for HRMT 6550/6556 and HRMT 5550. Departmental approval.

HRMT 6570/6576 GLOBAL HOSPITALITY (3) LEC. 3. Or departmental approval. Contemporary issues confronting the global hospitality industry. Credit will not be given for HRMT 6570/6576 and HRMT 5570.

HRMT 6590/6596 RECREATIONAL FOODSERVICE MGMT (3) LEC. 3. Methods and systems of managing foodservice operations in recreational facilities. Credit will not be given for both HRMT 6590/6596 and HRMT 5590. Or departmental approval.

HRMT 7000/7006 HOSPITALITY ENTERPRISE (3) LEC. 3. Emphasizes aspects of hospitality enterprise including developmental, motivational, financial and human resource issues through contemporary academic literature. Credit will not be given for both HRMT 7000 and HRMT 7006.

HRMT 7010/7016 ADVANCED TOURISM ANALYSIS (3) LEC. 3. This course acquaints students with selected theories, methods, techniques, current issues, practices, and principles that govern tourism behavior. Credit will not be given for both HRMT 7010 and HRMT 7016.

HRMT 7920/7926 PROF INTERNSHIP IN HRMT (1-3) INT. SU. Application and analysis of principles and theories of hospitality in a professional hospitality setting. No more than three hours may count toward a graduate degree. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

HRMT 8860/8866 CURRENT ISSUES IN HOSPITALITY MANAGEMENT (3) LEC. 3. Analysis of current issues in the hospitality industry with emphasis on management.

HRMT 8870 ADVANCED HOSPITALITY MANAGEMENT RESEARCH AND APPLICATIONS (3) LEC. 3. Comprehensive review of the academic research process in the context of hospitality management.

HRMT 8880 THEORETICAL DEVELOPMENTS FOR HOSPITALITY (3) LEC. 3. The nature of hospitality theory and its development.

Human Dev & Family Studies - HDFS

Courses

HDFS 1850 CURRENT ISSUES IN HUMAN DEVELOPMENT AND FAMILY STUDIES (3) LEC. 3. Current issues facing families and children evaluated in the light of scientific research. Fall, Spring.

HDFS 2000 MARRIAGE AND FAMILY IN A GLOBAL CONTEXT (3) LEC. 3. Examination of marriage and family systems, including their interface with the broader socio-cultural context. Fall, Spring.

HDFS 2010 LIFESPAN HUMAN DEVELOPMENT IN FAMILY CONTEXT (3) LEC. 3. Human development within the context of the family and across the family life cycle with a focus on significant life transitions. Fall, Spring.

HDFS 2030 PROFESSIONAL DEVELOPMENT AND ETHICS (3) LEC. 3. Appraisal of career potential, formulation of a professional code of ethics, and exploration of career options. Fall, Spring.

HDFS 3010 CHILD DEVELOPMENT IN THE FAMILY (3) LEC. 3. Pr., 2.25 GPA. HDFS 2010. Social, emotional, physical and intellectual development in early and middle childhood with a special focus on family relationships. Fall, Spring.

HDFS 3030 ADOLESCENT AND ADULT DEVELOPMENT IN THE FAMILY (3) LEC. 3. Pr., 2.25 GPA. HDFS 2010. Analysis of adolescent and adult development with emphasis on family context and developmental outcomes employing an ecological framework.

HDFS 3040 HUMAN SEXUALITY OVER THE FAMILY LIFE CYCLE (3) LEC. 3. Pr., HDFS 2000 or (SOCY 1000 or SOCY 1007) or PSYC 2010. Human sexuality from a life-cycle perspective, emphasizing developmental, familial and societal factors.

HDFS 3060 PATTERNS OF FAMILY INTERACTION (3) LEC. 3. Pr., 2.25 GPA. HDFS 2000. Examination of family process and interaction, emphasizing major conceptual frameworks of family development. Fall, Spring.

HDFS 3080 DEVELOPMENT OF INTERPERSONAL SKILLS (3) LEC. 3. Pr., 2.25 GPA. HDFS 2000. Examination of the competencies necessary for development of successful interpersonal relationships. Fall, Spring.

HDFS 3090 TECHNIQUES OF INTERVIEWING IN PROFESSIONAL SETTINGS (2) LEC. 2. Pr., HDFS 2000. Development of effective interpersonal skills used in professional relationships.

HDFS 3380 STUDY ABROAD OPPORTUNITIES IN HUMAN SCIENCES (1) LEC. 1. Exploration of study abroad opportunities for students interested in the International Minor in Human Sciences.

HDFS 3460 EFFECTIVE GUIDANCE AND INTERACTION WITH YOUNG CHILDREN (3) LEC. 1. LAB. 6. Pr., HDFS 3010. Child development knowledge of teacher child relationships applied to interactions with young children at Auburn University Early Learning Center. Fall, Spring.

HDFS 3470 LEARNING EXPERIENCES FOR YOUNG CHILDREN (3) LEC. 1. LAB. 6. Pr., HDFS 3460 and HDFS 3010. Child development knowledge applied to preschool curriculum planning with supervised participation at Auburn University Early Learning Center. Fall, Spring.

HDFS 3910 PRACTICUM (1-6) PRA. SU. Pr., Departmental approval. Directed experience in a professional setting. A) Human Development; B) Family Studies; C) Marriage and Family Therapy. Fall, Spring. Course may be repeated for a maximum of 6 credit hours.

HDFS 3930 SERVICE LEARNING IN HUMAN DEVELOPMENT AND FAMILY STUDIES (1-6) AAB/LEC. Pr., Departmental approval. Application of HDFS-relevant knowledge to real-life situations through active participation in a directed community service experience. A.) Auburn University Early Learning Center; B.) Harris Early Learning Center of Birmingham; C.) Other Community Placements. Course may be repeated for a maximum of 6 credit hours.

HDFS 3980 UNDERGRADUATE RESEARCH AND STUDY (1-5) AAB/LEC. SU. Directed research under faculty supervision. Course may be repeated for a maximum of 5 credit hours.

HDFS 4380 STUDY AND TRAVEL IN HUMAN DEVELOPMENT AND FAMILY STUDIES (2-6) AAB/FLD. Pr., CAHS 2000 and HDFS 2000 and NTRI 2000. Departmental approval. Study or work in the United States or internationally. Course may be repeated for a maximum of 6 credit hours.

HDFS 4500 HOSPITALIZED CHILDREN AND THEIR FAMILIES (3) LEC. 3. Pr., HDFS 3010. Junior standing in HDFS major or a major in a related field. Theories and research about children and their families in hospital settings. Fall.

HDFS 4670 PARENT EDUCATION (3) LEC. 3. Pr., HDFS 2010. Principles of working with parents on individual and group bases.

HDFS 4680 FAMILY IN CROSS-CULTURAL PERSPECTIVE (3) LEC. 3. Pr., 2.25 GPA. HDFS 2000. Examination of family function and diversity in cultures and family systems around the world.

HDFS 4700 GENDER ROLES AND CLOSE RELATIONSHIPS (3) LEC. 3. Pr., HDFS 2000 or SOCY 1000 or SOCY 1007 or PSYC 2010. Analysis of changing roles and their effects on romantic, marital, and parent-child relationships.

HDFS 4920 INTERNSHIP IN HUMAN DEVELOPMENT AND FAMILY STUDIES (12) INT. Departmental approval, completion of required 3000 and 4000 level HDFS courses with a C or better, 2.25 overall GPA, HDFS major. Application must be submitted two semesters in advance. A computer and internet access is required.

HDFS 4950 ADVANCED SEMINAR (3) LEC. 3. Pr., Departmental approval. Topical seminar in HDFS. A) Advanced Research B) Child Development; C) Family Studies; D) Marriage and Family Therapy. Course may be repeated for a maximum of 9 credit hours.

HDFS 4960 SPECIAL PROBLEMS IN HUMAN DEVELOPMENT AND FAMILY STUDIES (1-3) IND. SU. Pr., Departmental approval. Supervised readings in one or more topical areas. Course may be repeated for a maximum of 3 credit hours.

HDFS 4980 ADVANCED UNDERGRADUATE RESEARCH IN HUMAN DEVELOPMENT AND FAMILY STUDIES (1-5) IND. Pr., Departmental approval, Junior standing. Conduct research under the direction of a human development and family studies faculty member on a topic of mutual interest. Course may be repeated for a maximum of 5 credit hours.

HDFS 4997 HONORS THESIS (2-6) IND. SU. Pr., Honors College. Research in specialized topics. Course may be repeated for a maximum of 6 credit hours.

HDFS 5200 PROGRAM DEVELOPMENT AND EVALUATION (3) LEC. 3. Pr., Junior standing. Application of research to the development and evaluation of programming for children and families.

HDFS 5300 FAMILY AND SOCIAL POLICY (3) LEC. 3. Pr., Junior standing. Examination and critique of social policies from a family perspective.

HDFS 5970 SPECIAL TOPICS IN HUMAN DEVELOPMENT AND FAMILY STUDIES (3) LEC. 3. Pr., Junior standing. Study of topics of special interest beyond the current departmental offerings. Course may be repeated for a maximum of 9 credit hours.

HDFS 6200 PROGRAM DEVELOPMENT AND EVALUATION (3) LEC. 3. Pr., Graduate standing. Application of research to the development and evaluation of programming for children and families.

HDFS 6300 FAMILY AND SOCIAL POLICY (3) LEC. 3. Pr., Graduate standing. Examination and critique of social policies from a family perspective.

HDFS 6970 SPECIAL TOPICS IN HUMAN DEVELOPMENT AND FAMILY STUDIES (3) LEC. 3. Pr., Graduate standing. Study of topics of special interest beyond the current departmental offerings. Course may be repeated for a maximum of 9 credit hours.

HDFS 7000 ADOLESCENT DEVELOPMENT (3) LEC. 3. Critical examination of empirical research and theories of adolescent development. Fall.

HDFS 7010 DEVELOPMENTAL SCIENCE I: CHILDHOOD AND ADOLESCENCE (3) LEC. 3. Survey and critical examination of research on development from birth through adolescence.

HDFS 7020 DEVELOPMENTAL SCIENCE II: ADULTHOOD AND AGING (3) LEC. 3. Survey and critical evaluation of research on development in the adult and aging periods of the life cycle.

HDFS 7030 RELATIONSHIP DEVELOPMENT AND PROCESS IN CHILDHOOD AND ADOLESCENCE (3) LEC. 3. Theoretical and empirical themes focused on processes and dynamics of relationships in childhood adolescence.

HDFS 7040 RELATIONSHIP DEVELOPMENT AND PROCESS IN ADULTHOOD (3) LEC. 3. Theoretical and empirical themes focused on processes and dynamics of relationships in adulthood and aging.

HDFS 7050 RESEARCH METHODS FOR HUMAN DEVELOPMENT AND FAMILY STUDIES (3) LEC. 3. Coreq., HDFS 7051Pr., Departmental approval. Survey of principles and methods for studying individuals, dyadic relationships and families. Fall.

HDFS 7051 RESEARCH METHODS FOR HUMAN DEVELOPMENT AND FAMILY STUDIES LAB (1) LAB. 1. Coreq., HDFS 7050Lab devoted to principles and methods for studying individuals, dyadic relationships and families. Fall.

HDFS 7060 RESEARCH METHODS FOR HUMAN DEVELOPMENT AND FAMILY STUDIES II (3) LEC. 3. Pr., HDFS 7050.Coreq., HDFS 7061Pr., Departmental approval. Survey of principles and advanced methods for studying individuals, dyadic relationships, and families.

HDFS 7061 RESEARCH METHODS FOR HUMAN DEVELOPMENT AND FAMILY STUDIES II LABORATORY (1) LAB. 1. Pr., HDFS 7050.Coreq., HDFS 7060Pr., Departmental approval. Lab devoted to the application of principles and advanced methods for studying individuals, dyadic relationships, and families. Spring.

HDFS 7600 MARRIAGE AND FAMILY THERAPY THEORY I (3) LEC. 3. Pr., Departmental approval. Overview of theoretical and historical foundations, classic and contemporary therapy models, and integrative frameworks for marriage and family therapy. Fall.

HDFS 7601 MARRIAGE AND FAMILY THERAPY THEORY LABORATORY I (1) LAB. 3. Pr., Departmental approval. Basic clinical skills and self-of-the-therapist issues. Fall.

HDFS 7610 MARRIAGE AND FAMILY THERAPY THEORY II (3) LEC. 3. Pr., Departmental approval. Current theory and conceptual issues in the practice of marriage and family therapy. Fall.

HDFS 7620 MARRIAGE AND FAMILY THERAPY CLINICAL ISSUES I: FAMILY SYSTEMS (3) LEC. 3. Pr., Departmental approval. Advanced study of conceptual models and clinical approaches utilized in treating family systems. Spring.

HDFS 7621 MARRIAGE AND FAMILY THERAPY LABORATORY II (1) LAB. 1. Coreq., HDFS 7620Pr., Departmental approval. Application of clinical models in a supervised setting. Spring.

HDFS 7630 MARRIAGE AND FAMILY THERAPY CLINICAL ISSUES II: INDIVIDUALS (3) LEC. 3. Pr., Departmental approval. Assessment and treatment of children, adolescents, adults, and sexuality issues from a systemic perspective. Summer.

HDFS 7631 MARRIAGE AND FAMILY THERAPY LABORATORY III (1) LAB. 3. Coreq., HDFS 7630Departmental approval. Application of clinical skills with families, couples and individuals. Summer.

HDFS 7640 MARRIAGE AND FAMILY THERAPY CLINICAL ISSUES III: COUPLES (3) LEC. 3. Pr., Departmental approval. Conceptual, assessment and clinical approaches utilized in treating couples. Fall.

HDFS 7650 MARRIAGE AND FAMILY THERAPY PROFESSIONAL ISSUES (3) LEC. 3. Pr., Departmental approval. Professional, ethical, and legal issues associated with the practice of marriage and family therapy. Summer.

HDFS 7900 DIRECTED STUDIES (1-3) AAB/IND. SU. Pr., Departmental approval. A) Child Care and Programs for Young Children; B) Family Relations; C) Human Development; D) Marriage & Family Therapy; E) Parent Education; F) Social Policy. Course may be repeated for a maximum of 9 credit hours.

HDFS 7910 PRACTICUM (1-9) AAB/PRA. SU. A) Child Care and Programs for Young Children; B) Family Relations; C) Human Development; D) Marriage and Family Therapy; E) Parent Education; F) Social Policy; G) Teaching. Course may be repeated for a maximum of 9 credit hours.

HDFS 7920 MARRIAGE AND FAMILY THERAPY INTERNSHIP (3) INT. Pr., Departmental approval. Clinical practice of marriage and family therapy. Course may be repeated for a maximum of 9 credit hours.

HDFS 7930 SEMINAR IN HUMAN DEVELOPMENT AND FAMILY STUDIES (1-3) SEM. Pr., Departmental approval. A) Infancy/ Childhood; B) Adolescence/Young Adulthood; C) Adulthood/Aging; D) Family as a Microsystem; E) Family and Mesosystem; F) Family in the Macrosystem; G) Child and Family Program Planning and Evaluation. Course may be repeated for a maximum of 16 credit hours.

HDFS 7940 DIRECTED FIELD EXPERIENCE (1-9) AAB/FLD. SU. Pr., Departmental approval. A) Child Care and Programs for Young Children; B) Family Relations; C) Human Development; D) Marriage and Family Therapy; E) Parent Education; F) Social Policy. Course may be repeated for a maximum of 9 credit hours.

HDFS 7990 RESEARCH AND THESIS (1-10) AAB/MST.

HDFS 8050 ADVANCED RESEARCH METHODS I (3) LEC. 3. Pr., HDFS 7060.Coreq., HDFS 8051In-depth examination of research methods, designs, and data analytic strategies commonly used in child and family research.

HDFS 8051 ADVANCED RESEARCH METHODS (1) LAB. 1. Pr., HDFS 7060.Coreq., HDFS 8050Lab designed to enhance the application of advanced research methods and data analytic strategies used in HDFS research.

HDFS 8060 APPLIED LONGITUDINAL METHODS IN HUMAN DEVELOPMENT AND FAMILY STUDIES (3) LEC. 3. Pr., HDFS 7060.Coreq., HDFS 8061In depth examination of applied longitudinal methodology as analytic strategies used for research in Human Development and Family Studies.

HDFS 8061 APPLIED LONGITUDINAL METHODS IN HUMAN DEVELOPMENT AND FAMILY STUDIES LAB (1) LAB. 1. Pr., HDFS 7060.Coreq., HDFS 8060Lab designed to enhance the examination of longitudinal methodology as an analytic strategy used in HDFS research.

HDFS 8070 ADVANCED RESEARCH METHODS II (1-3) LEC. Pr., HDFS 7060.Specialized methods of advanced research in Human Sciences for 1 to 3 credits. Course may be repeated for a maximum of 9 credit hours.

HDFS 8970 ADVANCED SPECIAL TOPICS IN HUMAN DEVELOPMENT AND FAMILY STUDIES (1-3) LEC. Departmental approval. Study of advanced topics of special interest beyond the current departmental offerings. Course may be repeated for a maximum of 9 credit hours.

HDFS 8990 RESEARCH AND DISSERTATION (1-10) DSR.

Human Resource Mngt - HRMN

Courses

HRMN 3420 HUMAN RESOURCE MANAGEMENT (3) LEC. 3. Pr., P/C, MNGT 3100 or P/C, MNGT 3810.Management of human resources dealing with selection, training, placement, appraisal, compensation, and employee representation.

HRMN 4430 LABOR RELATIONS (3) LEC. 3. General survey of the development of collective bargaining, major provisions of labor law, and bargaining issues of craft and industrial unions.

HRMN 4920 INTERNSHIP (1-6) AAB/INT. SU. Pr., 2.50 GPA.Approval by departmental intern program committee. Course may be repeated for a maximum of 6 credit hours.

HRMN 4950 SEMINAR IN HUMAN RESOURCE MANAGEMENT (1-10) SEM. Course may be repeated for a maximum of 10 credit hours.

HRMN 5460 HUMAN RESOURCE LEGISLATION (3) LEC. 3. Pr., MNGT 3420 or HRMN 3420.Legislation that impacts the management of human resources within the organization. A

HRMN 5470 EMPLOYEE COMPENSATION (3) LEC. 3. Pr., MNGT 3420 or HRMN 3420.Modern compensation systems, strategic planning, wage and salary management, benefits administration and pay incentive development.

HRMN 5480 LABOR RELATIONS LAW (3) LEC. 3. Legal principles and issues under the Labor Management Relations Act and related laws. Case problem analysis.

HRMN 5510 HUMAN RESOURCE PLANNING, DEVELOPMENT, AND APPRAISAL (3) LEC. 3. Pr., MNGT 3420 or HRMN 3420.Theory, practice and design of managerial systems in these functions.

HRMN 5520 HUMAN RESOURCES AND ORGANIZATIONAL RESEARCH (3) LEC. 3. Pr., STAT 2610 and (MNGT 3420 or HRMN 3420).Human resource problems studied through a project involving data collection, analysis and a research report.

HRMN 5540 HUMAN RESOURCES SELECTION AND PLACEMENT (3) LEC. 3. Pr., (MNGT 2600 or STAT 2610) and (MNGT 3420 or HRMN 3420).A review of contemporary issues involved in administering a program for selecting employees.

HRMN 5550 HUMAN RESOURCE INFORMATION SYSTEMS (3) LEC. 3. Importance, nature, and application of a modern human resource information system such as SAP Human Resource Module.

HRMN 5900 DIRECTED STUDIES (1-3) IND. SU. Independent study on current topics in management. Course may be repeated for a maximum of 6 credit hours.

HRMN 5960 SPECIAL PROBLEMS (1-3) IND. Independent study investigating current literature in management. Course may be repeated for a maximum of 6 credit hours.

HRMN 6460/6466 HUMAN RESOURCE LEGISLATION (3) LEC. 3. Pr., MNGT 3420 or HRMN 3420. Legislation that impacts the management of human resources within the organization.

HRMN 6470/6476 EMPLOYEE COMPENSATION (3) LEC. 3. Pr., MNGT 3420 or HRMN 3420. Study of the theory, procedures, techniques, and practices used to administer modern organization compensation systems.

HRMN 6480/6486 LABOR RELATIONS LAW (3) LEC. 3. Study of legal principles under the Labor Management Relations Act and related labor laws. Case problems and current legal issues are analyzed.

HRMN 6510/6516 HR PLANNING DEV AND APPRAISAL (3) LEC. 3. Pr., MNGT 3420 or HRMN 3420. Theory, practice, and design of managerial systems and these functions.

HRMN 6520/6526 HUMAN RESOURCE AND ORGANIZATIONAL RESEARCH (3) LEC. 3. Pr., STAT 2610 and (MNGT 3420 or HRMN 3420). Study of human resource problems through a primary research project involving data collection, analysis, and written research report.

HRMN 6540/6546 HUMAN RESOURCES SELECTION AND PLACEMENT (3) LEC. 3. Pr., STAT 2610 and (MNGT 3420 or HRMN 3420). A review of contemporary issues involved in administering a program for selecting employees.

HRMN 6550 HUMAN RESOURCE INFORMATION SYSTEMS (3) LEC. 3. Importance, nature, and application of a modern human resource information system such as SAP Human Resource Module.

HRMN 6900/6906 DIRECTED STUDIES (1-3) IND. SU. Independent study on current topics in management. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

HRMN 6960/6966 SPECIAL PROBLEMS (3) IND. General management theories, practices, and functions in industry and business. Individual work with a designated faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

HRMN 7080/7086 ADVANCED HUMAN RESOURCE MANAGEMENT (3) LEC. 3. Advanced study of the role of personnel and human resource management. Topics include employee selection, performance appraisal, compensation, training, and development.

HRMN 7440/7446 COLLECTIVE BARGAINING & ARBITRATION (3) LEC. 3. Evolution and development of union-management relationships and the process of collective bargaining and arbitration. Case problem analysis and current labor relations issues.

HRMN 7990 RESEARCH AND THESIS (1-10) MST. Research on thesis or research project. Departmental approval. Course may be repeated with change in topics.

Human Sciences, General - HUSC

Courses

HUSC 2000/2003 HUNGER: CAUSES, CONSEQUENCES, AND RESPONSES (3) LEC. 3. Examine hunger as a complex issue of sustainable human development. Topics include causes and consequences of domestic and global hunger and potential solutions. Credit will not be given for both HUSC 2000 and HUSC 2007.

HUSC 2007 HUNGER: CAUSES, CONSEQUENCES, AND RESPONSES (3) LEC. 3. Pr., Honors College. Examine hunger as a complex issue of sustainable human development. Topics include causes and consequences of domestic and global hunger and potential solutions. Credit will not be given for both HUSC 2000 and HUSC 2007.

HUSC 3380/3383 STUDY ABROAD OPPORTUNITIES IN HUMAN SCIENCES (2) LEC. 2. Coreq., HUSC 4380 and HUSC 4010 and HUSC 4940. Pre-departure orientation for student participating in the Joseph S. Bruno Auburn Aboard program in Ariccia, Italy. May also be taken by students exploring study abroad opportunities through the alternative International Minor in Human Sciences. Ungapped 2.5 gpa or departmental approval.

HUSC 4000 HUNGER STUDIES CAPSTONE (3) LEC. 3. Pr., HUSC 2000 or HUSC 2007. Examination of global and domestic hunger issues from multidisciplinary perspectives.

HUSC 4010 CHS@AU IN ITALY: INTEGRATED GLOBAL STUDIES (6) LEC. 6. Coreq., HUSC 3380 and HUSC 4380 and HUSC 4940 Multi-faceted cultural experience focused on individuals/ families in the context of history and Italian culture. Departmental approval.

HUSC 4380 AUBURN ABROAD IN ITALY STUDY AND TRAVEL (2) AAB/FLD. 2. Pr., (P/C, HUSC 3380 or P/C, HUSC 3383) and P/C, HUSC 4010 and P/C, HUSC 4940. Coreq., HUSC 3380 and HUSC 4940 and HUSC 4010 Broaden world views, increase cultural awareness, and demonstrate an ability to function global through the Auburn Abroad in Italy program. Ungapped 2.25 gpa.

HUSC 4940 CHS@AU IN ITALY: DIRECTED FIELD EXPERIENCES (6) AAB/FLD. 6. Coreq., HUSC 4010 and HUSC 3380 and HUSC 4380 Supplemental lectures for HUSC 4010 provided through field trips and participation in Italian culture experiences. Ungapped 2.5 gpa or departmental approval.

HUSC 5940 STUDY AND TRAVEL IN HUMAN SCIENCES (1-6) LEC. Pr., 2.25 GPA. Provide students with opportunities to reach beyond the classroom to study topics that are relevant to human sciences and quality of life issues. Application required; additional requirements may apply. Course may be repeated for a maximum of 6 credit hours.

HUSC 6940 STUDY AND TRAVEL IN HUMAN SCIENCES (1-6) LEC. Provide students with opportunities to reach beyond the classroom to study topics that are relevant to human sciences and quality of life issues. Application required; additional requirements may apply. Course may be repeated for a maximum of 6 credit hours.

HUSC 7910 CHS@AU IN ITALY PROGRAM ADMINISTRATION PRACTICUM (6) AAB/PRA. 6. SU. Graduate status and acceptance to the Joseph S. Bruno Auburn Abroad in Italy program. One course in interpersonal communications or consent of instructor. Directed practical experience administering an undergraduate study abroad program.

Industrial & Sys Eng - INSY

Courses

INSY 3020 OCCUPATIONAL SAFETY ERGONOMICS (3) LEC. 3. Basic principles of occupational safety engineering and ergonomics in the evaluation and design of occupation work areas and processes that include human operators.

INSY 3021 METHODS ENGINEERING, WORK MEASUREMENT AND ERGONOMICS LABORATORY (3) LEC. 2. LAB. 3. Coreq., INSY 3020 Develops the student's ability to design workplaces and methods while providing an understanding of the work measurements process. Enables students to generate much of the basic methods data utilized in most industrial engineering projects.

INSY 3030 CAD FOR ENGINEERS WITH INDUSTRIAL APPLICATIONS (1) LAB. 3. Pr., COMP 1200 or COMP 1210 or COMP 3000 or ENGR 1110. Use of computer technology to aid engineering design in industrial applications, e.g. represent and modify mechanical parts, diagrams, schematics, tools, equipment, office and plant layouts, etc.

INSY 3400 STOCHASTIC OPERATIONS RESEARCH (3) LEC. 3. Pr., ENGR 1110 and MATH 2660 and STAT 3600. Modeling and analysis of decision-making and operations subject to randomness including decision analysis, stochastic dynamic programming, Markov chains, and queuing theory.

INSY 3410 DETERMINISTIC OPERATIONS RESEARCH (3) LEC. 2. LAB. 3. Pr., ENGR 1110 and MATH 2660. Formulation, solution, interpretation, and implementation of mathematical models in operations research including linear programming, integer programming and network flows.

INSY 3420 SIMULATION (3) LEC. 2. LAB. 3. Pr., INSY 3400 and (COMP 3010 or COMP 3013) and STAT 3610. Simulation procedures for solving complex systems analysis problems. Emphasis on random processes, model building and construction of computer simulation models.

INSY 3600 ENGINEERING ECONOMY (3) LEC. 3. Pr., ENGR 1110. Principles required in engineering economic studies.

INSY 3700 OPERATIONS PLANNING AND CONTROL (3) LEC. 2. LAB. 3. Pr., INSY 3400 and INSY 3410 and STAT 3610. Analytical methods for operations planning and control, including forecasting systems, production planning, inventory control systems, scheduling systems, and project management.

INSY 3800 MANUFACTURING SYSTEMS I (3) LEC. 2. LAB. 3. Introduction to the design, analysis, and operation of manufacturing systems, the first course in a required two-course sequence including Manufacturing Systems II.

INSY 4330 STATISTICAL QUALITY DESIGN AND CONTROL (3) LEC. 3. Pr., STAT 3610. Statistical process control and methods for quality improvement. Acceptance sampling for attributes and for variables.

INSY 4500 PROFESSIONAL PRACTICE (1) LEC. Discussion and activities in current problems, the global context of, professional practice, professional opportunities and lifelong learning in Industrial and Systems Engineering. Senior standing in INSY.

INSY 4700 MANUFACTURING SYSTEMS II (3) LEC. 3. Pr., INSY 3420 and INSY 3600 and INSY 3700 and INSY 3800. Continuation of the design, analysis, and operation of manufacturing systems, the second course in a required two-course sequence including Manufacturing Systems I.

INSY 4800 SENIOR DESIGN (3) LAB. 9. Pr., INSY 3021 and INSY 4700. Capstone course in which undergraduate course-work principles are brought to bear upon a design problem in a cooperating industry or institution.

INSY 4960 SPECIAL PROBLEMS (1-5) IND. Individual student endeavor under faculty supervision involving special problems in Industrial and Systems Engineering. Interested student must submit written proposal to department head. Departmental approval. Course may be repeated for a maximum of 5 credit hours.

INSY 4970 INDUSTRIAL AND SYSTEMS ENGINEERING SPECIAL TOPICS (1-10) LEC. Special topics in Industrial and Systems Engineering. Specific prerequisites will be determined and announced for each offering. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

INSY 4997 HONORS THESIS (1-6) IND. Pr., Honors College. Individual student endeavor consisting of direct research and writing of honors thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

INSY 5010 SAFETY ENGINEERING I (3) LEC. 3. Pr., INSY 3020. Occupational safety engineering and management with emphasis on control of hazardous materials, fire prevention, safety considerations in production facility design, and maintenance, and operation of effective safety programs. Credit will not be given for both INSY 5010 and INSY 6010/6016. Departmental approval.

INSY 5240 PRODUCTION AND INVENTORY CONTROL SYSTEMS (3) LEC. 3. Pr., INSY 3700. Analysis and design of production and inventory control systems with emphasis on quantitative methods, algorithms, and information technology. Credit will not be given for both INSY 5240 and INSY 6240/6246.

INSY 5250 SCHEDULING AND PROJECT MANAGEMENT (3) LEC. 3. Pr., INSY 3700. Sequencing and scheduling methods and models are presented, with special emphasis on scheduling and controlling projects. Credit will not be given for both INSY 5250 and INSY 6250/6256.

INSY 5330 DATA BASED DECISION MAKING USING SIX SIGMA (3) LEC. 3. Pr., INSY 4330. Covers statistical tools needed for implementation of "Six Sigma", "Learn Six Sigma" and "Design for Six Sigma". Credit will not be given for both INSY 5330 and INSY 6330/6336. or departmental approval.

INSY 5500 INFORMATION TECHNOLOGY FOR OPERATIONS (3) LEC. 3. Pr., (COMP 3010 or COMP 3013). Role and potential of using computer-integrated systems within manufacturing and service industries. Analysis of relevant data, synthesis of the flow of information in an operations environment, and development of databases to support the production process. Credit will not be given for both INSY 5500 and INSY 6500/6506.

INSY 5550 DECISION SUPPORT SYSTEMS FOR OPERATIONS (3) LEC. 3. Pr., COMP 3010 or COMP 3013. Fundamentals for modeling, designing, and implementing decision support systems for the operation of manufacturing and service industries. Credit will not be given for both INSY 5550 and INSY 6550/6556.

INSY 5600 MANUFACTURING AND PRODUCTION ECONOMICS (3) LEC. 3. Pr., INSY 3600. Continuation of INSY 3600. Emphasis on design economics and cost estimating techniques and applications to various manufacturing and service operations. Credit will not be given for both INSY 5600 and INSY 6600/6606.

INSY 5630 REAL OPTIONS AND DECISION ANALYSIS (3) LEC. 3. Pr., INSY 3600 and STAT 3600. Analysis of engineering and business decisions under risk and contemporary risk management methods including statistical decision theory and real options. Credit will not be given for both INSY 5630 and INSY 6630/6636.

INSY 5800 LEAN PRODUCTION (3) LEC. 3. Manufacturing system design based on a strategy of linked cells providing a continuous flow of materials. Evaluation strategies and analysis tools are studied. Credit will not be given for both INSY 5800 and INSY 6800/6806.

INSY 5830 VEHICLE TECHNOLOGY AND TRENDS (3) LEC. 3. Investigation of the advances in automotive technology and the impact of future technologies on the design and manufacture of the automobile. Credit will not be given for both INSY 5830 and INSY 6830/6836.

INSY 5840 CONTROL OF THE MANUFACTURING FLOOR AND PROCESSES (3) LEC. 2. LAB. 3. Students work within multi-disciplinary teams to apply the principles of Computer Aided Manufacturing and the Toyota Production System (TPS) on the modern automated floor. Laboratory features CNC Controls, Robots, Programmable Logic Controllers (PLC) and Kanban system. DELMIA Catia, and MasterCAM. Credit will not be given for both INSY 5840 and INSY 6840/6846.

INSY 5850 ELECTRONICS MANUFACTURING SYSTEMS (3) LEC. 3. Introduction to electronics packaging and electronics manufacturing technologies including current and future trends, design and quality, and manufacturing for high volume. Credit will not be given for both INSY 5850 and INSY 6850/6856.

INSY 5860 AUTOMOTIVE MANUFACTURING SYSTEMS (3) LEC. 3. History of automotive manufacturing and the automotive manufacturing systems for a typical automotive assembly plant. Credit will not be given for both INSY 5860 and INSY 6860/6866.

INSY 6010/6016 SAFETY ENGINEERING I (3) LEC. 3. Occupational safety engineering and management with emphasis on control of hazardous materials, fire prevention, safety considerations in production facility design and maintenance, and operation of effective safety programs. Departmental approval. Credit will not be given for both INSY 5010 and INSY 6010.

INSY 6240/6246 PRODUCTION AND INVENTORY CONTROL SYSTEMS (3) LEC. 3. Analysis and design of production and inventory control systems with emphasis on quantitative methods, algorithms, and information technology. Credit will not be given for both INSY 5240 and INSY 6240.

INSY 6250/6256 SCHEDULING AND PROJECT MANAGEMENT (3) LEC. 3. Sequencing and scheduling methods and models are presented, with special emphasis on scheduling and controlling projects. Credit will not be given for both INSY 5250 and INSY 6250.

INSY 6330/6336 DATA BASED DECISION MAKING USING SIX SIGMA (3) LEC. 3. Covers statistical tools needed for implementation of "Six Sigma", "Lean Six Sigma" and "Design for Six Sigma". Credit will not be given for both INSY 5330 and INSY 6330/6336. Departmental approval.

INSY 6500/6506 INFORMATION TECHNOLOGY FOR OPERATIONS (3) LEC. 3. Role and potential of using computer-integrated systems within manufacturing and service industries. Analysis of relevant data, synthesis of the flow of information in an operations environment, and development of databases to support the production process. Credit will not be given for both INSY 5500 and INSY 6500.

INSY 6550/6556 DECISION SUPPORT SYSTEMS FOR OPERATIONS (3) LEC. 3. Fundamentals for modeling, designing, and implementing decision support systems for the operation of manufacturing and service industries. Credit will not be given for both INSY 5550 and INSY 6550.

INSY 6600/6606 MANUFACTURING AND PRODUCTION ECONOMICS (3) LEC. 3. Continuation of INSY 3600. Emphasis on design economics and cost estimating techniques and applications to various manufacturing and service operations. Credit will not be given for both INSY 5600 and INSY 6600.

INSY 6630/6636 REAL OPTIONS/DECISION ANALYSIS (3) LEC. 3. Analysis of engineering and business decisions under risk and contemporary risk management methods including statistical decision theory and real options. Credit will not be given for both INSY 5630 and INSY 6630/6636.

INSY 6800/6806 LEAN PRODUCTION (3) LEC. 3. Manufacturing system design based on a strategy of linked cells providing a continuous flow of materials. Evaluation strategies and analysis tools are studied. Credit will not be given for both INSY 5800 and INSY 6800.

INSY 6830/6836 VEHICLE TECHNOLOGY AND TRENDS (3) LEC. 3. Investigation of the advances in automotive technology and the impact of future technologies on the design and manufacture of the automobile. Credit will not be given for both INSY 5830 and INSY 6830.

INSY 6840/6846 CONTROL OF THE MANUFACTURING FLOOR AND PROCESSES (3) LEC. 2. LAB. 3. Students work within multi-disciplinary teams to apply the principles of Computer Aided Manufacturing and the Toyota Production System (TPS) on the modern automated floor. Laboratory features CNC Controls, Robots, Programmable Logic Controllers (PLC) and Kanban system. DELMIA Catia and MasterCAM. Credit will not be given for both INSY 5840 and INSY 6840.

INSY 6850/6856 ELECTRONICS MANUFACTURING SYSTEMS (3) LEC. 3. Introduction to electronics packaging and electronics manufacturing technologies including current and future trends, design and quality, and manufacturing for high volume. Credit will not be given for both INSY 5850 and INSY 6850.

INSY 6860/6866 AUTOMOTIVE MANUFACTURING SYSTEMS (3) LEC. 3. History of automotive manufacturing and the automotive manufacturing systems for a typical automotive assemble plant. Credit will not be given for both INSY 5860 and INSY 6860.

INSY 7020/7026 SAFETY ENGINEERING II (3) LEC. 3. Pr., (INSY 6010 or INSY 6016).Systems safety analysis techniques including human error and reliability, fault trees, and cost benefit analysis.

INSY 7030/7036 MANUFACTURING SYSTEMS DESIGN AND ANALYSIS (3) LEC. 3. Modeling and analysis of manufacturing systems. Emphasis on the development of analytical models of serial production lines, flexible manufacturing systems, cellular systems, and facility layout and location problems. Departmental approval.

INSY 7050/7056 INDUSTRIAL HYGIENE AND ENVIRONMENTAL HAZARDS (3) LEC. 3. Introduction to the basic concepts of industrial hygiene with emphasis on the industrial hygiene/safety interface and on the evaluation and control of noise and vibration stress.

INSY 7060/7066 ERGONOMICS I (3) LEC. 3. Overview of the human body systems and evaluation of the physiological response of the human body to occupational activities with emphasis on task design.

INSY 7070/7076 ERGONOMICS II (3) LEC. 3. Pr., INSY 7060 or INSY 7066. Use of biomechanics in the evaluation and design of work activities. Emphasis is placed on biomechanical modeling, manual materials handling, tool design, and repetitive motion trauma.

INSY 7080/7086 HUMAN FACTORS ENGINEERING (3) LEC. 3. Examination of human factors, ergonomics and safety research methodologies. Emphasis is on human information input, output and control processes with the objective of optimizing integration of the human into simple and complex systems.

INSY 7081 HUMAN FACTORS LABORATORY (1) LAB. 3. Coreq., INSY 7080. Laboratory experience in testing human factors principles and concepts covered in INSY 7080. Experience in proper writing of laboratory reports.

INSY 7100/7106 ADAPTIVE OPTIMIZATION (3) LEC. 3. Adaptive search methods inspired by nature for continuous and combinatorial optimization. Methods include simulated annealing, genetic algorithms, evolutionary strategies, tabu search and ant colony systems. Departmental approval.

INSY 7190 OCCUPATIONAL SAFETY AND HEALTH FORUM I (1) LEC. 1.

INSY 7200/7206 ENGINEERING APPLICATIONS OF FUZZY SYSTEMS AND NEURAL NETWORKS (3) LEC. 3. Introduction to fuzzy systems and neural networks with emphasis on their uses in engineering applications in clustering, modeling, optimization, control, forecasting, and classification. A Departmental approval.

INSY 7230/7236 ADVANCED LAYOUT AND LOCATION (3) LEC. 3. Facility layout algorithms and the facility design process. Facility location models and their relationship to strategic organization goals.

INSY 7240/7246 PRODUCTION AND INVENTORY CONTROL THEORY (3) LEC. 3. Theoretical foundations for the analysis and design of production and inventory control systems with emphasis on quantitative methods and current areas of research.

INSY 7290 OCCUPATIONAL SAFETY AND HEALTH PRACTICUM I (1) LEC. 1. Study of contemporary interdisciplinary issues in occupational safety and health. Investigation of real-world interdisciplinary OSH problems. Analysis and presentation of OSH concerns and solutions.

INSY 7300/7306 ADVANCED ENGINEERING STATISTICS I (3) LEC. 3. Advanced concepts of experimental design including blocked designs, analysis of variance regression approach, and fractional factorials in base-2 designs. Emphasis throughout is on developing and improving industrial products and processes. Credit will not be given for both INSY 7300 and STAT 7300.

INSY 7310/7316 ADVANCED ENGINEERING STATISTICS II (3) LEC. 3. Pr., (STAT 7300 or STAT 7306) or (INSY 7300 or INSY 7306). Fractional factorial experimentation applied for the purpose of process and quality improvement and optimization, introduction to analysis of covariance, multiple regression analysis, and response surface analysis. Credit will not be given for both INSY 7310 and STAT 7310.

INSY 7330/7336 OFF-LINE AND ON-LINE QUALITY CONTROL (3) LEC. 3. Pr., STAT 7010 or (STAT 7300 or STAT 7306) or (INSY 7300 or INSY 7306). Taguchi's quality loss functions. Taguchi's orthogonal arrays and their relationships to fractional factorial designs. Taguchi's parameter and tolerance designs, on-line process control concepts and methods. Process capability. CUSUM charts and other process control charts. Departmental approval.

INSY 7380/7386 RELIABILITY ENGINEERING (3) LEC. 3. Pr., STAT 7600 or (STAT 7300 or STAT 7306) or (INSY 7300 or INSY 7306). Reliability, maintenance, replacement with emphasis on failure-rate estimation and life testing. Hazard functions, parameter estimation and reliability testing including exponential and Weibull distributions. Markov models and repairable systems. Credit is not given for both INSY 7380 and STAT 7780. Departmental permission.

INSY 7390 OCCUPATIONAL SAFETY AND HEALTH FORUM II (1) LEC. 1. Pr., INSY 7190. Continuation of OSH Forum I (contemporary interdisciplinary issues in occupational safety and health). Emphasis is placed on leadership and mentoring of other OSH students (INSY 7190).

INSY 7400/7406 SIMULATION MODELING AND ANALYSIS (3) LEC. 3. Introduction to discrete event modeling and simulation. Fundamental concepts of Monte Carlo and discrete event simulation and the application of those concepts using commercial simulation software.

INSY 7420/7426 LINEAR PROGRAMMING AND NETWORK FLOWS (3) LEC. 3. Linear programming and network flows emphasizing algorithms and theory.

INSY 7430/7436 INTEGER AND NONLINEAR PROGRAMMING (3) LEC. 3. Pr., INSY 7420 or INSY 7426. Integer and non linear programming, emphasizing algorithms and theory. Departmental approval.

INSY 7440/7446 DYNAMIC PROGRAMMING (3) LEC. 3. Aspects of sequential decision making with emphasis on formulation and solution using the dynamic programming algorithm. Approximation methods for problems involving large state spaces. Solution techniques for problems under uncertainty. Departmental approval.

INSY 7470/7476 SEARCH METHODS FOR OPTIMIZATION (3) LEC. 3. Single and multivariate search techniques and strategies that are used in finding the optimum of discrete and continuous functions.

INSY 7490 OCCUPATIONAL SAFETY AND HEALTH PRACTICUM II (1) LEC. 1. Pr., INSY 7290. Investigation of real-world interdisciplinary OSH problems. Analysis and presentation of OSH concerns and solutions. Emphasis is placed on leadership and mentoring of other OSH students (INSY 7290).

INSY 7500/7506 ADVANCED SIMULATION (3) LEC. 3. Pr., INSY 7400 or INSY 7406. Coverage of advanced simulation and simulation language design concepts. Includes advanced input/output analysis, modeling concepts, and language design/implementation concepts.

INSY 7550/7556 STOCHASTIC OPERATIONS RESEARCH (3) LEC. 3. Stochastic operations research models with emphasis on model formation, solution and interpretation of results. Emphasis on stochastic processes, queuing theory and their applications.

INSY 7600/7606 ADVANCED ECONOMIC DECISION ANALYSIS (3) LEC. 3. Theory and practice of decision making under uncertainty. Stochastic capital budgeting models: Decision trees, the value of information: Bayesian approaches, including conjugate and predictive distributions: Utility theory foundations, risk preference, multi-attribute utility: Financial engineering, real options. Departmental approval.

INSY 7940 INDUSTRIAL AND SYSTEMS ENGINEERING PROBLEMS (1-5) IND. Individual student endeavor under staff supervision involving special problems of an advanced undergraduate or graduate nature in Industrial and Systems Engineering. Interested student must submit written proposal to department head. Departmental approval. Course may be repeated for a maximum of 5 credit hours.

INSY 7950/7956 SEMINAR (1) LEC. 1. SU. Presentation and discussion of ISE research by graduate students, faculty and guests. Must be taken at least one term and cannot be used in the plan of study to apply towards the minimum number of hours for a degree.

INSY 7970/7976 INDUSTRIAL AND SYSTEMS ENGINEERING SPECIAL TOPICS (1-5) LEC. 1. LAB. 1. Special topics of a graduate nature pertinent to Industrial and Systems Engineering. Specific prerequisites will be determined and announced for each offering. Departmental approval. Course may be repeated for a maximum of 5 credit hours.

INSY 7980/7986 MASTER'S IN INDUSTRIAL AND SYSTEMS ENGINEERING PROJECT (1-5) IND. SU. Non-thesis master's project. Course may be repeated for a maximum of 5 credit hours.

INSY 7990 RESEARCH AND THESIS (1-10) MST. Departmental approval. Course may be repeated with change in topics.

INSY 8010 ADVANCED SAFETY ENGINEERING (3) LEC. 3. Pr., INSY 7020 or INSY 7026. Topics of current interest in occupational safety research. Occupational safety research methodology and research priorities.

INSY 8060/8066 ADVANCED ERGONOMICS (3) LEC. 3. Pr., INSY 7060 or INSY 7066. Topics of current interest in occupational ergonomics and human factors research. Occupational ergonomics and human factors research methodology and research priorities.

INSY 8250 SCHEDULING THEORY (3) LEC. 3. Pr., (INSY 6250 or INSY 6256) and (INSY 7420 or INSY 7426). The theory for various scheduling methods and models is presented. Emphasis is on current research in the scheduling area.

INSY 8420/8426 TOPICS IN OPTIMIZATION (3) LEC. 3. Pr., INSY 7420 or INSY 7426. Basic concepts and theory of optimization, including saddlepoint conditions for differentiable and non-differentiable programs, duality, approximation, decomposition and partitioning, illustrated by application to specific algorithms.

INSY 8970 INDUSTRIAL AND SYSTEMS ENGINEERING SPECIAL TOPICS (1-5) LEC. Special topics of an advanced graduate nature pertinent to industrial and systems engineering. Specific prerequisites will be determined and announced for each offering. Departmental approval. Course may be repeated for a maximum of 5 credit hours.

INSY 8990 RESEARCH AND DISSERTATION (1-10) DSR. Departmental approval. Course may be repeated with change in topics.

Industrial Design - INDD

Courses

INDD 1120 INDUSTRIAL DESIGN IN MODERN SOCIETY (3) LEC. 3. Survey of design and its impact upon modern society. Review of methods, products, marketing, patents, education, and career opportunities.

INDD 1310 SYNTHESIS OF DRAWING (10) LEC. 3, LST. 12. SU. Developing mechanical and production design drawings, with in-depth study of perspective systems. Product design communication with emphasis on drawing, development, presentation.

INDD 1320 PROTOTYPE FABRICATION (3) LEC. 2. LAB. 2. Fabrication of three-dimensional models utilizing various materials and machineries. Includes model making, creative modeling, study models, presentation models, mock-ups and prototypes.

INDD 1400 CAREERS IN INDUSTRIAL DESIGN (2) LEC. 2. Survey of careers in the field of industrial design demonstrated through case studies, product examples and biographies.

INDD 2110 TWO DIMENSIONAL INDUSTRIAL DESIGN PRINCIPLES (6) LEC. 2, LST. 10. Transference of abstract principles of design to fabrication of simple tools. Emphasis on expression of functional objects.

INDD 2120 COMPUTER AND DESIGN COMMUNICATIONS (3) LEC. 2. LAB. 2. Alternative modes of communicating design ideas via computer. Executing design ideas for two-dimensional design fundamentals and mechanical design drawings.

INDD 2130 PRESENTATION RENDERING (3) LEC. 2. LAB. 2. Concept development using drawing and rendering skills with different media for ideas communication and presentation.

INDD 2210 THREE DIMENSIONAL INDUSTRIAL DESIGN PRINCIPLES (6) LEC. 2, AAB/LST. 10. Pr., INDD 2110. Analysis of design fundamentals through three dimensional form. Analyzing function, utility, convenience, safety, maintenance and sustainable design.

INDD 2220 ANTHROPOMETRY (3) LEC. 3. Pr., INDD 2110. Body measurements, movements and human capacity in relation to design with introduction to ergonomics and human physiology as it relates to design. Departmental approval.

INDD 2230 HISTORY OF INDUSTRIAL DESIGN (3) LEC. 3. Pr., INDD 2110. Survey humankind's production of artifacts, from prehistory to present. Emphasis on ideas that mass produced artifacts mirror history and everyday culture.

INDD 3110 EXHIBIT AND PACKAGING (6) LEC. 1, LST. 8. Pr., INDD 2120. Display systems using models, concepts development, rendering, packaging, identity programs and professional presentations.

INDD 3120 INDUSTRIAL DESIGN METHODS (3) LEC. 3. Pr., INDD 2210. Introduction to design management. Design methods and organizational procedures in analysis and solutions of design problems. Surveying philosophies and theories of design.

INDD 3130 BASIC PHOTOGRAPHY FOR INDUSTRIAL DESIGN (3) LEC. 2. LAB. 2. Pr., INDD 2210. Photography in design and art environments. Techniques of developing, printing and enlarging. Lighting techniques for portfolio photography, including lighting, studio photography, composition.

INDD 3210 PRODUCT DESIGN (6) LEC. 2, LST. 10. Pr., INDD 2210. Product design utilizing design methodology from proposal to working pre-prototype, including planning, research, development, model-making, manufacturing and documentation.

INDD 3220 MATERIALS AND TECHNOLOGY (3) LEC. 3. Pr., INDD 3120. Characteristics and utility of materials such as plastic, metal, and ceramics in manufacture and the study of machine/tool processes used by industry.

INDD 3230 ADVANCED COMPUTER AIDED DESIGN (3) LEC. 2. LAB. 2. Pr., INDD 2120. Introduction to CAD software emphasizing three-dimensional modeling. Students will learn drawing functions. Concepts of three-dimensional relationship of objects discussed.

INDD 4110 ADVANCED PRODUCT DESIGN (6) LEC. 2, AAB/LST. 10. Pr., INDD 3120 and INDD 3210. Design or redesign of products and systems of advanced complexity.

INDD 4120 ADVANCED COMPUTER AIDED DESIGN II (3) LEC. 3. Pr., INDD 3230. This course builds on concepts learned in INDD 3230, with emphasis on form creation, modeling and troubleshooting and the use of digital techniques to produce three dimensional models.

INDD 4210 INDUSTRIAL DESIGN THESIS (6) LEC. 2, AAB/LST. 10. Pr., INDD 4110. Product design projects involving all design phases; including planning, research, development, finalization, specification, and documentation.

INDD 4220 PROFESSIONAL PRACTICE (3) LEC. 3. Pr., INDD 3110 and INDD 3210. Business aspects of industrial design, including property, design contract, letters of agreement, business planning and design marketing.

INDD 4907 HONORS READING (1-3) LEC. Departmental approval.

INDD 4997 HONORS THESIS (1-3) LEC. Pr., Honors College. Departmental approval.

INDD 5010 HISTORY OF INDUSTRIAL DESIGN II (3) LEC. 3. A survey of humankind's production of artifacts, from prehistory to contemporary times, with an emphasis on the idea that mass produced artifacts mirror the meanings of historical events and everyday culture.

INDD 5030 CASE STUDIES IN DESIGN (3) LEC. 3. Design projects undertaken by industry studied by examination of artifacts and records, and by class discussion. Focus on the socio-cultural relevancy of the artifacts.

INDD 5120 PROFESSIONAL PORTFOLIO (3) LEC. 3. Pr., INDD 3110 and INDD 3210. Design and development of a portfolio and promotional material presenting the student's work to entry-level professional standards.

INDD 5960 SPECIAL PROBLEMS (1-5) AAB. Development of individual projects. Research, design and reports on approved topics. Course may be repeated for a maximum of 15 credit hours.

INDD 6010 HISTORY OF INDUSTRIAL DESIGN II (3) LEC. 3. A survey of humankind's production of artifacts, from prehistory to contemporary times, with an emphasis on the idea that mass produced artifacts mirror the meanings of historical events and everyday culture.

INDD 6030 CASE STUDIES IN DESIGN (3) LEC. 3. Design projects undertaken by industry studied by examination of artifacts and records, and by class discussions. Focus on the socio-cultural relevancy of the artifacts.

INDD 6120 PORTFOLIO (3) LEC. 3. Preparation of professional portfolio for graduation and employment.

INDD 6960 SPECIAL PROBLEMS (1-5) AAB. Development of individual projects. Research, design and reports on approved topics. Course may be repeated for a maximum of 15 credit hours.

INDD 7010 DESIGN ORIENTATION (3) LEC. 3. Introduction to the Industrial Design graduate program: degree options, study directions, research methods, and areas. Students are required to develop a research/project proposal.

INDD 7020 COMPUTER/INDUSTRIAL DESIGN (3) LEC. 3. Synthesizing studies in research, analysis, and application based on interdisciplinary concept. Emphasis on the relation of products and systems to those who use them.

INDD 7610 PRINCIPLES OF INDUSTRIAL DESIGN (3) LEC. 3. Detailed study of the communication principles of form qualities with emphasis of these aesthetic principles to the technical and human factors of artifacts.

INDD 7620 DESIGN MANAGEMENT (3) LEC. 3. Detailed study of the industrial design project management and development with emphasis on the interrelational management concepts of research, product planning, production and marketing.

INDD 7630 HUMAN FACTORS IN DESIGN (3) LEC. 3. Theoretical and empirical examination of human factors (Anthropometrics, Biotechnology, Engineering Psychology, Behavioral Cybernetics, Ergonomics) as applied to man-machine environmental systems.

INDD 7640 AESTHETICS IN DESIGN (3) LEC. 3. Aesthetics in the context of the designed environment encompassing: non-verbal communication; object language semiotics; gestalt and perception systems; information aesthetics, and consumer product safety.

INDD 7650 DESIGN THEORIES (3) LEC. 3. Examination of design theories and philosophies related to technical artifacts in man-machine systems. Comparative studies of unifying theories in art, science, design, technology and the humanities.

INDD 7660 INDUSTRIAL DESIGN METHODOLOGY (3) LEC. 3. Industrial design methodologies and specific methods employed in research, analysis, synthesis, and evaluation in comprehensive design problems.

INDD 7670 SYSTEMS DESIGN (3) LEC. 3. Systems approach and interdisciplinary team work to design problems inquires into details of sub-systems, components and parts, with emphasis on the relation of the performance of technical systems to optional human factor effects.

INDD 7910 INDUSTRY PRACTICUM (5) AAB/STU. 5. This course will demand the application of acquired skill to the resolution of product design based issues within an industry collaboration studio over the period of one semester.

INDD 7980 NON-THESIS DESIGN (3) STU. 3. Synthesizing studies in research, analysis and application based on interdisciplinary concept. Emphasis on the relation of products and systems to those who use them.

INDD 7990 DESIGN THESIS (1-5) AAB/RES. Credit to be arranged. Course may be repeated with a change in topic.

Information Systems Management - ISMN

Courses

ISMN 3040 BUSINESS TELECOM MANAGEMENT (3) LEC. 3. Pr., ISMN 3140 or MNGT 3140. Voice communications and technology and data communications (LAN, WAN, internet broadband), networks, protocols, standards, legislation and project development and management. Junior standing.

ISMN 3070 BUSINESS SYSTEM LOGIC AND MODELING (3) LEC. 3. Concepts, techniques, and tools for discovering, specifying, and modeling business logic are introduced, explored, and applied.

ISMN 3080 ADVANCED PROGRAMMING AND COMPUTER APPLICATIONS (3) LEC. 3. Pr., MNGT 3070 or ISMN 3070. Visual and object-oriented business programming languages are introduced and explored.

ISMN 3140 INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS (2) LEC. 2. The fundamental principles of the structure and management of information systems. Junior standing.

ISMN 3830 DATABASE MANAGEMENT SYSTEMS (3) LEC. 3. Pr., (MNGT 3070 or ISMN 3070). Business applications software in a database environment, complex data, and file structures, systems design consideration of global and distributed databases.

ISMN 3840 ANALYSIS OF BUSINESS SYSTEMS (3) LEC. 3. Pr., P/C, ISMN 3830. The study and application of tools, techniques, and methodologies to analyze, understand, and model business systems.

ISMN 4090 DESIGN OF BUSINESS SYSTEMS (3) LEC. 3. Pr., (ISMN 3830 or ISMN 3840). General systems techniques; methods of process, data, object, and integration design and modeling; process and project planning and control.

ISMN 4850 COMPETITIVE STRATEGIES THROUGH INFORMATION (3) LEC. 3. Emphasizes how competitive strategies for companies are formulated and implemented using a combination of information technologies.

ISMN 4870 DATABASE SERVER FUNDAMENTALS (3) LEC. 3. Coreq., ISMN 3830 and MNGT 3830 Database servers as core components of developing n-Tier information technology are discussed. Practical exercises used to demonstrate the process of using QSQL to manage database through data manipulation language and data definition language. Advanced database objects are introduced.

ISMN 4880 MGT INFO SYSTEMS PROJECTS (3) LEC. 3. Pr., ISMN 4090. Coreq., ISMN 3830 and MNGT 3830 Synthesizes theory and principles of management information systems (MIS) using real-life, hands-on-projects.

ISMN 4920 INTERNSHIP (1-6) AAB/INT. SU. Pr., 2.50 GPA. Approval by departmental intern program committee. Course may be repeated for a maximum of 6 credit hours.

ISMN 4950 SEMINAR IN INFORMATION SYSTEMS MANAGEMENT (1-10) SEM. Course may be repeated for a maximum of 10 credit hours.

ISMN 5040 ADVANCED BUSINESS DATA COMMUNICATIONS (3) LEC. 3. Pr., (MNGT 3140 or ISMN 3140). Experienced-based class building on domain knowledge of prerequisites; gives personal and team experience in data communications technology and networks.

ISMN 5270 CURRENT ISSUES IN IS FOR ORGS (3) LEC. 3. This course covers current issues in Information Systems Management and Technology. As such, topics may differ from semester to semester. The objective of the course is to allow students to become familiar with issues such as emerging technologies, information systems and their role in vertical portals, and the role of information systems in industry. Course is designed to enable students to take it twice with subject change. Course may be repeated for a maximum of 6 credit hours.

ISMN 5280 INFORMATION SYSTEMS ARCHITECTURE IN THE SMALL-AND MEDIUM-SIZE ENTERPRISE (3) LEC. 3. Pr., (MNGT 3040 or ISMN 3040) and (MNGT 3070 or ISMN 3070). This course is an expose' into the current business applications of open source software. The course consists of 1) A research component focusing on current trends and practices within the culture of Open Source Software as well as the current and potential impact on business and 2) a hands-on laboratory component in which students explore the application of Open Source Software as a business tool.

ISMN 5290/5293 ADVANCED BUSINESS APPLICATION DEVELOPMENT (3) LEC. 3. Pr., ISMN 3070.

ISMN 5370/5373 PROJECT MANAGEMENT (3) LEC. 3. Tools and techniques of information technology project management including leading project management software.

ISMN 5380/5383 SOCIAL MEDIA AS A TOOL FOR BUSINESS STRATEGY (3) LEC. 3. Learn how to use social media as an tool to integrate business processes and enhance business performance. May count either ISMN 5380/5383 or ISMN 6380/6386.

ISMN 5390/5393 INTEGRATING BUSINESS PROCESSES WITH ERP (3) LEC. 3. Examination of how integrating business processes in ERP environment promotes strategic alignment and performance gains for an organization. May count either ISMN 5390/5393 or ISMN 6390/6396.

ISMN 5630 CLIENTSIDE INTERNET PGM (3) LEC. 3. Fundamentals of client-side Internet programming using technologies such as HTML, JavaScript, Cascading Style Sheets, and XML.

ISMN 5640 SERVERSIDE INTERNET PGM (3) LEC. Fundamentals of server-side Internet programming using technologies such as PHP, MySQL, and XML.

ISMN 5650 ADVANCED OBJECT-ORIENTED AND INTERNET PROGRAMMING (3) LEC. 3. Pr., MNGT 3070 or ISMN 3070. Fundamentals of developing object-oriented, component-based and Internet business applications.

ISMN 5670 SECURITY AND INFORMATION ASSURANCE (3) LEC. 3. This course covers the fundamentals of computer security and information assurance from a management perspective. The student will be exposed to security and information assurance topics such as security policies, confidentiality, and ethics. Organizational issues of security and methodologies for information assurance will be discussed from a managerial perspective.

ISMN 5680 ADVANCED DATA BASE ADMINISTRATION AND DEVELOPMENT (3) LEC. 3. Pr., MNGT 3830 or ISMN 3830. Key tasks and functions required of a database administrator in a business environment.

ISMN 5690 KNOWLEDGE MANAGEMENT AND ORGANIZATIONAL LEARNING (3) LEC. 3. Introduction to knowledge management and its role in organizational decision-making and learning. Studies of issues related to management, creation, and use of knowledge as well as issues related to system design and implementation.

ISMN 5710/5713 INFORMATION RISK ANALYSIS (3) LEC. 3. In-depth instruction on the range of skills required of persons engaged in the performance of risk analysis functions.

ISMN 5720/5723 ELECTRONIC COMMERCE (3) LEC. 3. A managerial and interdisciplinary investigation into the many different business activities done on the Internet including buying and selling products and services, servicing customers, collaborating with stakeholders inside and outside the organization, social networking, and learning, among others. Students will come away with a broad knowledge of electronic commerce and its implications to modern business life and social life. Credit will not be given for both ISMN 5720/5723 and ISMN 6720/6726.

ISMN 5770 INFORMATION SYSTEMS ETHICS (3) LEC. 3. Pr., (PHIL 1020 or PHIL 1040) and ISMN 3140. Information systems ethics, including: fundamentals; professional and user standards; and issues related to privacy, freedom of expression, intellectual property, and software development.

ISMN 5870 BUSINESS INTELLIGENCE APPLICATIONS (3) LEC. 3. Pr., ISMN 3830 or BUAL 5650. Key tasks, tools, techniques and methodologies supporting the application of Business Intelligence Systems in organizations, and related management issues.

ISMN 5900 DIRECTED STUDIES (1-3) IND. SU. Independent study on current topics in management. Course may be repeated for a maximum of 6 credit hours.

ISMN 5960 SPECIAL PROBLEMS (3) IND. 3. Independent study investigating current literature in management. Course may be repeated for a maximum of 6 credit hours.

ISMN 6040/6046 ADVANCED BUSINESS DATA COMMUNICATIONS (3) LEC. 3. Pr., (MNGT 7120 or ISMN 7120) or (MNGT 3140 or ISMN 3140). Experienced-based class building on domain knowledge of prerequisites; gives personal and team experience in data communications technology and networks.

ISMN 6270/6276 CURRENT ISSUES IN INFORMATION SYSTEMS FOR ORGANIZATIONS (3) LEC. 3. This course covers current issues in Information Systems Management and Technology. As such, topics may differ from semester to semester. The objective of the course is to allow students to become familiar with issues such as emerging technologies, information systems and their role in vertical portals, and the role of information systems in industry. Course is designed to enable students to take it twice with subject change. Course may be repeated for a maximum of 6 credit hours.

ISMN 6280/6286 INFORMATION SYSTEMS ARCHITECTURE IN THE SMALL AND MEDIUM-SIZE ENTERPRISE (3) LEC. 3. Pr., (MNGT 3040 or ISMN 3040) and (MNGT 3070 or ISMN 3070). This course is an 'expose' into the current business applications of open source software. The course consists of 1) A research component focusing on current trends and practices within the culture of Open Source Software as well as the current and potential impact on business and 2) a hands-on laboratory component in which students explore the application of Open Source Software as a business tool. Equivalent courses at the graduate level.

ISMN 6290/6296 ADVANCED PROGRAMMING APPLICATION DEVELOPMENT (3) LEC. 3. Department approval. Programming languages and skills, with emphasis on designing and implementing computer-based business solutions.

ISMN 6370/6376 PROJECT MANAGEMENT (3) LEC. 3. Tools and techniques of information technology project management including leading project management software.

ISMN 6380/6386 SOCIAL MEDIA AS A TOOL FOR BUSINESS STRATEGY (3) LEC. 3. Learn how to use social media as a tool to integrate business processes and enhance business performance. May count either ISMN 5380/5383 or ISMN 6380/6386.

ISMN 6390/6396 INTEGRATING BUSINESS PROCESSES WITH ERP (3) LEC. 3. Examination of how integrating business processes in ERP environment promotes strategic alignment and performance gains for an organization. May count either ISMN 5390/5393 or ISMN 6390/6396.

ISMN 6630/6636 CLIENTSIDE INTERNET PROGRAMMING (3) LEC. 3. Fundamentals of client-side Internet programming using technologies such as HTML, JavaScript, Cascading Style Sheets, and XML.

ISMN 6640/6646 SERVERSIDE INTERNET PGM (3) LEC. 3. Fundamentals of server-side Internet programming using technologies such as PHP, MySQL, and XML.

ISMN 6650/6656 ADVANCED OBJECT-ORIENTED AND INTERNET PROGRAMMING (3) LEC. 3. Pr., MNGT 3070. Fundamentals of developing object-oriented, component-based and Internet business applications.

ISMN 6670/6676 SECURITY AND INFORMATION ASSURANCE (3) LEC. 3. This course covers the fundamentals of computer security and information assurance from a management perspective. The student will be exposed to security and information assurance topics such as security policies, confidentiality and ethics. Organizational issues of security and methodologies for information assurance will be discussed from a managerial perspective.

ISMN 6680/6686 ADVANCED DATA BASE ADMINISTRATION AND DEVELOPMENT (3) LEC. 3. Pr., (MNGT 3830 or ISMN 3830) or (MNGT 7830 or ISMN 7830). Key tasks and functions required of a database administrator in a business environment.

ISMN 6690/6696 KNOWLEDGE MANAGEMENT AND ORGANIZATIONAL LEARNING (3) LEC. 3. Introduction to knowledge management and its role in organizational decision-making and learning. Studies of issues related to management, creation, and use of knowledge as well as issues related to system design and implementation.

ISMN 6710/6716 INFORMATION RISK ANALYSIS (3) LEC. 3. In-depth instruction on the range of skills required of persons engaged in the performance of risk analysis functions. Major or minor College of Business or departmental approval.

ISMN 6720/6726 ELECTRONIC COMMERCE (3) LEC. 3. A managerial and interdisciplinary investigation into the many different business activities done on the Internet including buying and selling products and services, servicing customers, collaborating with stakeholders inside and outside the organization, social networking, and learning, among others. Students will come away with a broad knowledge of electronic commerce and its implications to modern business life and social life. Credit will not be given for both ISMN 5720/5723 and ISMN 6720/6726.

ISMN 6770/6776 INFORMATION SYSTEMS ETHICS (3) LEC. 3. Pr., (PHIL 1020 or PHIL 1040) and ISMN 3140. Information systems ethics, including: fundamentals; professional and user standards; and issues related to privacy, freedom of expression, intellectual property, and software development.

ISMN 6870/6876 BUSINESS INTELLIGENCE APPLICATIONS (3) LEC. 3. Pr., ISMN 3830 or BUAL 5650. Key tasks, tools, techniques and methodologies supporting the application of Business Intelligence Systems in organizations, and related management issues.

ISMN 6900/6906 DIRECTED STUDIES (1-3) IND. SU. Independent study on current topics in management. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

ISMN 6960/6966 SPECIAL PROBLEMS (3) IND. General management theories, practices, and functions in industry and business. Individual work with a designated faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ISMN 7020/7026 BUSINESS TELECOMMUNICATIONS AND NETWORKS (3) LEC. 3. Provides an understanding of voice and data communications, e.g., networks (LAN, internet), protocols standards, legislation and project development, so that managers might utilize telecommunications effectively.

ISMN 7140/7146 MANAGING END USER COMPUTING (3) LEC. 3. Studies MIS from user's perspective, and compares it with the roles of the professional department. Course covers support of desktop applications, data usage, and communications.

ISMN 7360/7366 INTEGRATING THEORY AND PRACTICE FOR TECHNOLOGY MANAGERS (3) LEC. 3. A study of the technical and non-technical forces that influence the decision-making process in companies by the use of innovative instructional material.

ISMN 7380/7386 INTEGRATING INFORMATION TECHNOLOGIES TO PROVIDE COMPETITIVE ADVANTAGE (3) LEC. 3. How to integrate effectively information technologies in formulating and implementing competitive strategies for companies.

ISMN 7660/7666 INFORMATION SYSTEMS ANALYSIS AND DESIGN (3) LEC. 3. General systems theory, information systems logical and physical analysis, structured and object-oriented methodologies and prototyping, system documentation, general design and use of CASE tools.

ISMN 7670/7676 ELECTRONIC COMMERCE (3) LEC. 3. The tools, skills, technologies, and business and social implications of the emergence of electronic commerce in cyberspace.

ISMN 7730/7736 MANAGEMENT OF INNOVATION (3) LEC. 3. Pr., BUSI 7220. The process of product and service innovation on two levels: managing product design and general strategies for managing multiple innovation streams.

ISMN 7760/7766 QUANT METHODS IN OPS MGT (3) LEC. 3.

ISMN 7810/7816 STRUCTURED DECISION MAKING (3) LEC. 3. Introduction to business decision structuring and aiding, including multiple criteria and group-decision making methodology.

ISMN 7830/7836 ADVANCED DATABASE MANAGEMENT SYSTEMS PROJECTS (3) LEC. 3. Database management systems using database methodologies to support business applications, including requirements for distributed databases.

ISMN 7870/7876 EXPERT SYSTEMS IN BUSINESS (3) LEC. 3. Pr., BUSI 7220. Study of expert systems and other knowledge-based systems in the organization, including relevant concepts, methodologies, architectures, strategies, and issues.

ISMN 7880/7886 ADVANCED MANAGEMENT INFOR SYST (3) LEC. 3. In-depth inquiry and analysis of advanced information technologies in organizations.

ISMN 7890/7896 INFORMATION RESOURCE MGT (3) LEC. 3. Pr., BUSI 7220. Management of information systems resources, unique management problems in a computer information systems environment. Strategic and competitive analysis of information technology.

ISMN 7980/7986 MMIS PROJECT (1-10) IND. SU. Independent exploration of an approved topic/problem that allows the student to demonstrate the application of knowledge and capabilities gained during the program. Approval of the project and assessment of its deliverables by the student's advisory committee is required. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

ISMN 7990 RESEARCH AND THESIS (1-10) MST. Research on thesis or research project. Departmental approval. Course may be repeated with change in topics.

ISMN 8010 IS MANAGEMENT RESEARCH SEM. I (3) SEM. 3. Preparation in conceptualization, conduct, and presentation MIS research. Departmental approval.

ISMN 8020 IS MANAGEMENT RESEARCH SEMINAR II (3) SEM. 3. Preparation in conceptualization, conduct, and presentation of applied and case studies research in MIS. Departmental approval.

ISMN 8500 ADVANCED IS MANAGEMENT RESEARCH SEMINAR I (3) SEM. 3. Theoretical foundations and research directions in the management of technology and technological innovation, with the primary focus on information technology and research. Departmental approval.

ISMN 8660 ADVANCED IS MANAGEMENT RESEARCH SEMINAR II (3) SEM. 3. Theoretical foundations and research directions in the alignment of information technology strategy to business objectives and goals. Departmental approval.

Integrated Textile & Appar - ITAS

Courses

ITAS 7200 INTEGRATED TEXTILE AND APPAREL COMPLEX (3) LEC. 3. Components, linkages, concepts and trends in an integrated, global textile/apparel/retail industry. Fall. Departmental approval.

ITAS 8950 INDUSTRY ISSUES SEMINAR (1) LEC. 1. SU. Research presentations and discussions on issues facing the global textile industrial complex. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ITAS 8960 CURRENT ISSUES IN INTEGRATED TEXTILE AND APPAREL SCIENCE (2) LEC. 2. Directed readings on current issues in the global textile industrial complex. Spring. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

ITAS 8970 ADVANCED TOPICS IN INTEGRATED TEXTILE AND APPAREL QUALITY CONTROL (3) LEC. 3. Quality related topics integrated for textile and apparel operations. Spring. Departmental approval.

ITAS 8990 RESEARCH AND DISSERTATION (1-10) DSR. Departmental approval. Course may be repeated with change in topics.

Integrtd Design & Construction - INDC

Courses

INDC 5040 SUSTAINABILITY FOR INTEGRATED PROJECT DELIVERY (3) LEC. 3. Principles, terminology, and methods of sustainable design and construction, with emphasis on role of interdisciplinary design collaboration. Must have APLA or BSCI. Departmental approval.

INDC 5510 DESIGN & CONSTRUCTION PROCESS (3) LEC. 3. Identification and balancing of architectural and urban design issues, tools and processes used by professional construction managers, with emphasis on collaborative aspects and their impact on efficiency. Departmental approval.

INDC 5610 DESIGN BUILD STUDIO (7) LEC. 3, LST. 9. Pr., ARCH 4020. First of three-studio progression. Integrated project delivery approach to design practice, with emphasis on development of facility with the design technologies and strategies and advanced digital tools. Departmental approval.

INDC 5620 DESIGN CONSTRUCTION STUDIO (6) LEC. 2, LST. 9. Pr., ARCH 4020. Second studio develops skills associated with schematic design phases of architectural project; emphasis on rigorous design research methods, program development, interdisciplinary collaboration. APLA departmental approval.

INDC 6040 SUSTAINABILITY FOR INTEGRATED PROJECT DELIVERY (3) LEC. 3.

INDC 6510 DESIGN & CONSTRUCTION PROCESS (3) LEC. 3. Identification and balancing of architectural and urban design issues, tools and processes used by professional construction managers, with emphasis on collaborative aspects and their impact on efficiency. Students must be IDC major.

INDC 6610 DESIGN BUILD STUDIO (7) LEC. 3, LST. 9. First of three-studio progression. Integrated project delivery approach to design practice, with emphasis on development of facility with the design technologies and strategies and digital tools employed in advanced practice.

INDC 6620 DESIGN CONSTRUCTION STUDIO (6) LEC. 2, LST. 9. Pr., INDC 6610. Second studio develops skills associated with schematic design phases of architectural project; emphasis on rigorous design research methods, program development, interdisciplinary collaboration.

INDC 6640 SUSTAINABILITY FOR INTEGRATED PROJECT DELIVERY (3) LEC. 3. Principles, terminology, and methods of sustainable design and construction, with emphasis on role of interdisciplinary design collaboration.

INDC 7020 INTEGRATED BUILDING PROCESSES (3) LEC. 3. Project manifestation and development preceding design/construction phases with emphasis on project owner's perspective, financial parameters, and speculative demand driving project viability. Departmental approval.

INDC 7030 CONSTRUCTION INFORMATION MANAGEMENT (3) LEC. 3. Applications of advanced information technology in building construction. Departmental approval.

INDC 7040 INTEGRATED BUILDING PROCESSES II (3) LEC. 3. Construction project delivery, from pre-construction through ownership. Departmental approval.

INDC 7550 COLLABORATIVE PRACTICE (3) LEC. 3. Coreq., INDC 7551 and INDC 6620. Current integrated delivery models and decision-making strategies related to interface of design and construction disciplines from professional, contractual and technological perspectives.

INDC 7551 COLLABORATIVE PRACTICE LAB (1) LAB. 4. Coreq., INDC 6620 and INDC 7550. Problem solving exercises (related to material covered in INDC 7550 and INDC 6220) will enable inter-disciplinary teams of students to apply principles of effective pre-construction practices.

INDC 7630 DESIGN CONSTRUCTION SUMMARY COMPREHENSIVE STUDIO (7) LEC. 3, LST. 9. Pr., INDC 6620 and INDC 7550 and INDC 7551. Final studio. Development of design and construction for architectural project in interdisciplinary teams, including analysis of constructability, projected construction cost, and scheduling.

INDC 7650 EXECUTIVE ISSUES (3) LAB. 3. Individually proposed problems or projects related to the construction industry. Students must prepare a written proposal with defined deliverables. Departmental approval.

INDC 7950 GRADUATE SEMINAR (1) SEM. 1. Project manifestation and development preceding design and construction phases with emphasis on the project owner's perspective, the financial parameters, and the speculative demand driving project viability. Departmental approval.

Interdepartmental Education - EDUC

Courses

EDUC 1010 ORIENTATION TO TEACHER EDUCATION (1) LEC. 1. SU. Orientation to the teaching profession.

EDUC 5970 SPECIAL TOPICS (1-9) LEC. Opportunity for study of current topics related to the field of education in general. Course may be repeated for a maximum of 9 credit hours.

EDUC 6970 SPECIAL TOPICS (1-9) LEC. Opportunity for study of current topics related to the field of education in general. Course may be repeated for a maximum of 9 credit hours.

Interdept Pharmacy - PYDI

Courses

PYDI 4980 INTRODUCTION TO UNDERGRADUATE RESEARCH IN PHARMACY (1-3) IND. SU. Individual problems course. Students will work under the direction of a faculty member on some problem of mutual interest. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PYDI 5000 DRUGS AND DISEASES I (5) LEC. 5. Integrated study of pathophysiology and chemical, pharmacological, biotechnology, and pharmacokinetic principles to explain the action of drugs. Fall.

PYDI 5020 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE I (2) LAB. 6. This course integrates the skills necessary for the provision of pharmaceutical care. Source material introduces and integrates knowledge and skills focusing on patient assessment and communication. Fall.

PYDI 5080 FOUNDATIONS OF PHARMACY (1) WSP. 1. One week experience orienting first year PYDI students to the context, concepts, tools, and skills necessary for understanding of, and success in pharmacy education. Fall.

PYDI 5090 PHARMACY PRACTICE EXPERIENCE I (2) PRA. 2. SU. First of a six-course sequence of introductory practice experience in which the concept of pharmaceutical care is introduced by the provision of basic care to community based patients. Fall.

PYDI 5100 DRUGS AND DISEASES II (5) LEC. 5. Pr., PYDI 5000. Presents, in an integrated manner, pathophysiology and chemical, pharmacological biotechnology principles to explain the action of drugs; continuation of PYDI 5000.

PYDI 5120 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE II (2) LAB. 6. Pr., PYDI 5020. This course integrates pharmaceutical care skills. Source material introduces and integrates knowledge and skills focusing on pharmaceutical calculations, communication, physical assessment and use of clinical literature. Spring.

PYDI 5130/5133 DRUG LITERATURE EVALUATION (2) LEC. 2. Development of the ability to effectively and efficiently retrieve drug information and critically evaluate and interpret studies published in the medical and pharmaceutical literature.

PYDI 5140 PRINCIPLES OF PHARMACOKINETICS (3) LEC. 3. Pr., PYDI 5000. To prepare students to use pharmacokinetic information and measurements to evaluate drug therapy and recommend appropriate dosing strategies for drug administration and monitoring.

PYDI 5190 PHARMACY PRACTICE EXPERIENCE II (2) PRA. 2. SU. Pr., PYDI 5090. Second of a six-course sequence of introductory practice experience in which the concept of pharmaceutical care is introduced by the provision of basic care to community-based patients. Spring.

PYDI 5200 DRUGS AND DISEASES III (8) LEC. 8. Pr., PYDI 5100 and PYDI 5140. Presentation in an integrated manner of pathophysiology and chemical, pharmacological, biotechnology, and pharmacokinetic principles to explain the action of drugs. Continuation of PYDI 5100. Fall.

PYDI 5220 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE III (2) LAB. 6. Pr., PYDI 5120. Integrates the provision of pharmaceutical care and pharmacy-specific skills related to drug-related problems. Supportive skills for the pharmaceutical sciences and other integrated skills are a major emphasis. Fall.

PYDI 5290 PHARMACY PRACTICE EXPERIENCE III (2) PRA. 2. SU. Third in six-course sequence of introductory practice experience in which pharmaceutical care is provided to moderately complex community based patients.

PYDI 5300 DRUGS AND DISEASES IV (8) LEC. 8. Pr., PYDI 5200. Presentation, in an integrated manner, of pathophysiology and chemical, pharmacological, biotechnology, and pharmacokinetic principles to explain the action of drugs. Continuation of PYDI 5200. Spring.

PYDI 5320 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE IV (2) LAB. 6. Pr., PYDI 5220. Continuation of PYDI 5220. Spring.

PYDI 5360/5363 PHARMACOTHERAPY I (3) LEC. 3. Pr., PYPP 5260 and BIOL 3200 and (PYPS 5200 or PYPS 5203) and PYDI 5350 and PYPC 5340. Application of the basic, clinical and socio-behavioral sciences to renal disorders.

PYDI 5370/5373 PHARMACOTHERAPY II (3) LEC. 3. Pr., PYPP 5260 and (PYPS 5200 or PYPS 5203) and PYDI 5350 and PYPS 5340 and BIOL 3200. Application of the basic, clinical and socio-behavioral sciences to endocrine disorders.

PYDI 5390 PHARMACY PRACTICE EXPERIENCE IV (2) PRA. 2. SU. Pr., PYDI 5290. Fourth in a six-course sequence of introductory practice experience in which pharmaceutical care is provided to moderately complex community based patients. Spring.

PYDI 5400/5403 PHARMACOTHERAPY III (3) LEC. 3. Application of the basic, clinical and socio-behavioral sciences to infectious diseases.

PYDI 5410/5413 PHARMACOTHERAPY IV (3) LEC. 3. Application of the basic, clinical and socio-behavioral sciences to cardiovascular disorders.

PYDI 5420/5423 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE V (2) LAB. 6. Application of the basic, clinical and socio-behavioral sciences to pulmonary disorders. Continuation of PYDI 5320.

PYDI 5430/5433 PHARMACOTHERAPY VI (3) LEC. 3. Application of the basic, clinical and socio-behavioral sciences to neurological and psychiatric disorders.

PYDI 5470 INTEGRATED PHARMACOTHERAPY I (6) RCT. 6. Application of the basic, clinical, and socio-behavioral sciences to identifying, preventing and solving health and drug related problems.

PYDI 5480 INTEGRATED PHARMACOTHERAPY II (6) RCT. 6. Application of the basic, clinical, and socio-behavioral sciences to identifying, preventing and solving health and drug related problems.

PYDI 5490 PHARMACY PRACTICE EXPERIENCE V (2) PRA. 2. SU. Fifth in a six-course sequence of introductory practice experiences in which pharmaceutical care is provided to increasingly complex community based patients along with patient care team management responsibilities. Fall.

PYDI 5500/5503 PHARMACOTHERAPY VII (3) LEC. 3. Application of the basic, clinical and socio-behavioral sciences to gastrointestinal disorders.

PYDI 5510/5513 PHARMACOTHERAPY VIII (3) LEC. 3. Application of the basic, clinical and socio-behavioral sciences to dermatological, rheumatological, hematological and oncological disorders.

PYDI 5520/5523 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE VI (2) LAB. 6. Pr., PYDI 5420. Application of the basic, clinical and socio-behavioral sciences to 125 infectious diseases. Continuation of PYDI 5420.

PYDI 5530/5533 PHARMACOTHERAPY X (3) LEC. 3. Pr., PYDI 5410 or PYDI 5413. Application of the basic, clinical and socio-behavioral sciences to cardiovascular disorders. Continuation of PYDI 5410.

PYDI 5570 INTEGRATED PHARMACOTHERAPY III (6) RCT. 6. Pr., PYDI 5480. Application of the basic, clinical, and socio-behavioral sciences to identifying, preventing and solving health and drug related problems. Continuation of PYDI 5480.

PYDI 5580 INTEGRATED PHARMACOTHERAPY IV (6) RCT. 6. Pr., PYDI 5480. Application of the basic, clinical, and socio-behavioral sciences to identifying, preventing and solving health and drug related problems. Continuation of PYDI 5570.

PYDI 5590 PHARMACY PRACTICE EXPERIENCE VI (2) PRA. 2. SU. Pr., PYDI 5490. Sixth in a six-course sequence of introductory practice experiences in which pharmaceutical care is provided to increasingly complex community based patients along with patient care team management responsibilities.

Interior Architecture - ARIA

Courses

ARIA 2150 ELEMENTS OF INTERIOR ARCH I (3) LEC. 3. Pr., ARCH 2020. The theory of design principles, aesthetics and concepts. Graphic drawings and models of interior spaces explored. Projects outside of class.

ARIA 2160 ELEMENTS OF INTERIOR ARCHITECTURE II (3) LEC. 3. The theory of design principles, aesthetics and concepts. Graphic drawings and models of interior spaces explored. Projects outside of class.

ARIA 3020 STUDIO 4A INTERIOR ARCHITECTURE (6) LEC. 2, LST. 10. Pr., ARCH 2020. Parallels Architecture Studio 4, but with an emphasis on interior architecture with exploration of detail and accommodation.

ARIA 4020 STUDIO 6A INTERIOR ARCHITECTURE (6) LEC. 2, LST. 10. Pr., ARCH 3020 and ARCH 3320 and ARCH 2110 and BSCI 3400. Parallels Architecture Studio 6, with emphasis on the development of interior architecture and spaces within an urban context. Consideration will be given to adaptive reuse.

ARIA 4030 INTERIOR ARCHITECTURE THESIS (6) LEC. 3, LST. 10. Pr., ARCH 4020. Coreq., ARIA 4080 Interior design project of the student's choice, under the direction of a faculty member.

ARIA 4080 INTERIOR ARCHITECTURE THESIS RESEARCH (2) LEC. 2. Pr., ARCH 4020. Research and writing of thesis documents, to include programming, site, and case studies.

ARIA 4450 INTERIOR ARCHITECTURE PROFESSIONAL PRACTICE (2) LEC. 2. Pr., ARCH 4020. Prepares student to enter professional office with an understanding of the skills, concepts and technical knowledge expected.

ARIA 4680 HISTORY AND THEORY OF INTERIOR ARCHITECTURE (3) LEC. 3. Pr., ARCH 4020. The theory and history of interior spaces, their social, material, and aesthetic development and their artifacts.

Intl Programs-Special Topics - INTL

Courses

INTL 1800 ORAL PROFICIENCY IN ENGLISH FOR INTERNATIONAL STUDENTS (3) LEC. 3. International students develop lecture note-taking skills, classroom oral presentation skills on general and specific subjects, and debating skills. None for degree-enrolled students; for transient students. Departmental approval.

INTL 1820 CLASSROOM COMMUNICATION SKILLS FOR INTERNATIONAL TEACHING ASSISTANTS (3) LEC. 3. SU. Oral language skills required for effective classroom communication.

INTL 1830 WRITING PROFICIENCY IN ENGLISH FOR INTERNATIONAL STUDENTS (3) LEC. 3. Skills that international students need to undertake successful research writing in English.

INTL 1840 READING SKILLS FOR ESL (3) LEC. 3. Comprehend extensive university-level readings, identify author's audience, purpose, viewpoint and tone, read 250 words per minute. None for degree-enrolled student; for transient students, one of the following: pBT TOEFL of 500, iBT TOEFL of 61, IELTS of 6.

INTL 1977 SPECIAL TOPICS IN INTERNATIONAL SUSTAINABILITY (2) LEC. 2. Pr., Honors College. A pre-Freshman international experience for select students. Open to all majors. Historical and contemporary sustainability issues are examined.

Journalism - JRNL

Courses

JRNL 1100 JOURNALISM FUNDAMENTALS (3) LEC. 3. Emphasis on Associated Press Stylebook, word selection in newspaper writing and spelling.

JRNL 2210 NEWSWRITING (3) LEC. 3. Pr., JRNL 1100. Introduction to newswriting techniques, with emphasis on learning news values, recognizing parts of a story and writing stories that meet standards of accuracy, grammar, style, spelling, law and ethics.

JRNL 2310 REPORTING (3) LEC. 3. Pr., JRNL 1100 and JRNL 2210. Traditional and electronic methods of gathering news; the writing of clear, accurate and meaningful news stories, and codes of ethical journalistic behavior. Includes coverage of speeches and meetings outside of class.

JRNL 2320 ADVISING STUDENT PUBLICATIONS (3) LEC. 3. Primarily for non-journalism and non-communication majors. Role and responsibilities of the publication adviser in high school and college.

JRNL 2910 PRACTICUM IN JOURNALISM (1) LEC. 1. SU. Pr., JRNL 1100 and JRNL 2210. Required for all Journalism majors. Working a minimum of 45 hours for The Auburn Plainsman in reporting, feature writing, editing and design or departmental approval.

JRNL 3010 DIGITAL NEWS PRODUCTION (3) LEC. 3. Pr., CMJN 2100 and JRNL 1100. Introduction to the basics of digital video production. Emphasis on techniques used in producing newscasts for broadcast, Web and mobile devices.

JRNL 3020 DIGITAL NEWS REPORTING (3) LEC. 3. Pr., JRNL 1100 and JRNL 2210 and JRNL 3010 and CMJN 2100. Writing and reporting digital news stories on deadline for broadcast, online, social media and mobile outlets.

JRNL 3110 INTRODUCTION TO APPLIED JOURNALISM (3) LEC. 3. Pr., JRNL 1100 and JRNL 2210 and JRNL 2310. An introduction to how a media organization operated and provides an opportunity for students to gain practical, hands-on journalism experience.

JRNL 3220 MAGAZINE AND FEATURE WRITING (3) LEC. 3. Pr., JRNL 1100 and CMJN 2100 and JRNL 2210. Various techniques of writing and selling features, both short and long pieces, for newspapers and magazine markets.

JRNL 3410 PHOTOJOURNALISM (3) LEC. 3. Pr., JRNL 1100 and CMJN 2100 and JRNL 2310 and JRNL 3220. Uses, techniques and processes of digital photography for the newspaper, magazine, and web-based industries. Operations of digital SLRs and Photo-shop and techniques for variety of assignments are addressed. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

JRNL 3470 EDITING AND DESIGN (3) LEC. 3. Pr., JRNL 1100 and JRNL 2210 and CMJN 2100. The basics of newspaper copy editing and design; with emphasis on hands-on techniques.

JRNL 3510 MULTIMEDIA JOURNALISM (3) LEC. 3. Pr., JRNL 1100 and CMJN 2100 and JRNL 2210. An introduction to multimedia journalistic storytelling. A reporting and production course where students use various technologies to produce journalism stories for digital platforms. Departmental approval. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

JRNL 3530 SPORTS REPORTING (3) LEC. 3. Pr., JRNL 1100 and JRNL 2210. Sports reporting for print, broadcast and online media, with emphasis on interviewing athletes, covering sporting events and issues surrounding sports.

JRNL 4230 ADVANCED REPORTING (3) LEC. 3. Pr., CMJN 2100 and JRNL 1100 and JRNL 2310 and JRNL 3220. Developing and writing news stories under deadline pressure; investigative and interpretative reporting.

JRNL 4320 ENTREPRENEURIAL JOURNALISM (3) LEC. 3. Pr., JRNL 1100 and CMJN 2100. Emphasis on content, advertising, audience and marketing in news organizations and applying entrepreneurial principles to journalism start-ups. 2.3 gpa.

JRNL 4410 JOURNALISM HISTORY (3) LEC. 3. Issues facing the American press, from colonial times to the present, with emphasis on regional and state issues.

JRNL 4417 HONORS JOURNALISM HISTORY (3) LEC. 3. Pr., Honors College. Issues facing the American press, from colonial times to the present, with emphasis on regional and state issues. Credit will not be given for both JRNL 4410 and JRNL 4417.

JRNL 4430 SPORTS, MEDIA AND SOCIETY (3) LEC. 3. Cultural and professional implications of the relationship between sports and media.

JRNL 4470 ADVANCED MAGAZINE AND FEATURE WRITING (3) LEC. 3. Pr., CMJN 2100 and JRNL 1100 and JRNL 2210 and JRNL 2310 and JRNL 3220. Feature writing skills and magazine and freelance writing.

JRNL 4480 ADVANCED PUBLICATION DESIGN (3) LEC. 3. Pr., JRNL 1100 and CMJN 2100 and JRNL 2210 and JRNL 3470.Desktop publishing knowledge required to produce print publications, including brochures and newsletters, and with exposure to web page, advertising and, magazine design.

JRNL 4490 LITERARY JOURNALISM (3) LEC. 3. A survey course on the best nonfiction produced by journalists.

JRNL 4870 COMMUNITY JOURNALISM (3) LEC. 3. Pr., JRNL 1100 and JRNL 2210 and CMJN 2100.The civic role of community journalists is explored.

JRNL 4920 JOURNALISM INTERNSHIP (3-6) INT. Pr., CMJN 2100 and JRNL 1100 and JRNL 2210 and JRNL 2310 and JRNL 3220 and JRNL 3470.Supervised, closely monitored work experience.

JRNL 4930 DIRECTED STUDIES (1-4) IND. Research and analysis of specific areas of journalism. Course may be repeated for a maximum of 6 credit hours.

JRNL 4967 HONORS SPECIAL PROBLEMS (1-3) LEC. 3. Pr., Honors College.Departmental approval; Course may be repeated for a maximum of 3 credit hours.

JRNL 4970 SPECIAL TOPICS IN JOURNALISM (3) AAB. 3. Pr., JRNL 1100 and JRNL 2210.Study of narrowly-defined journalism topics not already covered in the current JRNL curriculum. Fall, Spring. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Course may be repeated for a maximum of 6 credit hours.

JRNL 4997 HONORS THESIS (1-3) IND. 3. Pr., Honors College.Departmental approval.

Kinesiology - KINE

Courses

KINE 1100/1103 WELLNESS (2) LEC. 1. LAB. 2. Basic concepts and principles of wellness with laboratory experiences for the self-appraisal of health-related physical fitness. May count either KINE 1100 or KINE 1103.

KINE 2250/2253 MOTOR DEVELOPMENT DURING THE SCHOOL YEARS (2) LEC. 2. Practical strategies and applications for the enhancement of motor development for school-aged children. Priority given to students for whom the course is required and Kinesiology majors.

KINE 2251 LABORATORY IN MOTOR DEVELOPMENT DURING THE SCHOOL YEARS (1) LAB. 2. SU. Coreq., KINE 2253 and KINE 2250Laboratory experiences to enhance motor development in school-aged children. Priority given to students for whom the course is required and Kinesiology majors.

KINE 2800/2803 INTRODUCTION TO KINESIOLOGY (3) LEC. 3. People, history and programs that have led to the current status of physical education, exercise science and health promotion.

KINE 3010 INSTRUCTION AND TECHNOLOGY IN KINESIOLOGY (2) LEC. 1. LAB. 2. Communication skills, instructional strategies and technological competencies related to conveying information in the health and human performance disciplines.

KINE 3020/3023 SCIENTIFIC FOUNDATIONS OF KINESIOLOGY (4) LEC. 4. Overview of the biomechanical, physiological and psychological foundations of human movement. Core biology. May count either KINE 3020 or KINE 3023.

KINE 3100/3103 ADAPTIVE SPORTS (3) LEC. 3. An introduction to various competitive and recreational activities for persons with disabilities. May count either KINE 3100 or KINE 3103.

KINE 3200 SKILLS AND CONCEPTS OF RHYTHMIC ACTIVITIES (3) LEC. 2. LAB. 2. Skillful performance in gymnastics and other rhythmic activities and an understanding of the basic movement concepts in those activities.

KINE 3210 SKILLS AND CONCEPTS OF SPORT (3) LEC. 2. LAB. 2. Skillful performance in games and sports and an understanding of the tactics in those activities. Admission to Teacher Education.

KINE 3230 TEACHING MOTOR SKILLS (3) LEC. 2. LAB. 2. Introduction to motor skills that students learn during their elementary school years in physical education.

KINE 3250 SKILL ACQUISITION FOR SCHOOL-AGED CHILDREN (3) LEC. 2. LAB. 2. Pr., (HLHP 2250 or KINE 2250) and (HLHP 3020 or KINE 3020). Principles of skill acquisition applied to instructional settings in teaching and coaching.

KINE 3260 PHYSICAL EDUCATION FOR INDIVIDUALS WITH DISABILITIES (3) LEC. 2. LAB. 2. Pr., KINE 2250 and KINE 2251. Program needs of individuals with disabilities in physical education and physical activity settings.

KINE 3280 ASSESSMENT IN PHYSICAL EDUCATION (3) LEC. 3. Development of appropriate measurement tools to assess student learning. Admission to Teacher Education.

KINE 3300 INSTRUCTIONAL STRATEGIES IN PHYSICAL EDUCATION (3) LEC. 2. LAB. 2. Pr., HLHP 3010 or KINE 3010. Admission to Teacher Education. Instructional and class management strategies appropriate to teach quality elementary and secondary physical education Admission to Teacher Education.

KINE 3400 HEALTH PROMOTION IN THE WORKPLACE (3) LEC. 3. Planning, implementation, evaluation and marketing of health promotion programs.

KINE 3620 BIOMECHANICAL ANALYSIS OF HUMAN MOVEMENT (4) LEC. 3. LAB. 2. Understanding of anatomical, neuromuscular, and biomechanical principles of human movement. Departmental approval.

KINE 3650 MOTOR LEARNING AND PERFORMANCE (4) LEC. 3. LAB. 2. Understanding of the basic psychological processes in learning and control of skillful human movement. Departmental approval.

KINE 3680 PHYSIOLOGY OF EXERCISE (4) LEC. 3. LAB. 2. Energetics of exercise and physiological responses and adaptations of various organ systems (muscular, circulatory, respiratory, etc.) to acute and chronic exercise in different environments. Departmental approval.

KINE 3820/3823 PRINCIPLES OF SPORT COACHING (3) LEC. 3. Basic principles of sport pedagogy and the conduct of sport training programs. Departmental approval. May count either KINE 3820 or KINE 3823.

KINE 4200 PHYSICAL EDUCATION IN ELEMENTARY SCHOOLS (4) LEC. 2. LAB. 4. Pr., HLHP 3300. Admission to Teacher Education. Understanding of the skill theme approach based on skill themes, movement concepts and levels of skill proficiency. Credit will not be given for both KINE 4200 and KINE 4360. Admission to Teacher Education.

KINE 4300 PHYSICAL EDUCATION IN SECONDARY SCHOOLS (4) LEC. 2. LAB. 4. Pr., (KINE 3300 or HLHP 3300). Admission to Teacher Education. Constructing and implementing appropriate lifetime sports and fitness programs for middle and secondary school students. Admission to Teacher Education.

KINE 4350 TEACHING FOR LIFETIME PHYSICAL ACTIVITY (3) LEC. 2. LAB. 2. Pr., (HLHP 3020 or KINE 3020). Admission to Teacher Education. Coreq., KINE 3300 Skills and knowledge to conduct comprehensive fitness education programs in schools. Admission to Teacher Education.

KINE 4360 HEALTH EDUCATION AND PHYSICAL EDUCATION IN ELEMENTARY SCHOOLS (3) LEC. 2. LAB. 2. Admission to Teacher Education. Critical topics in health education and physical education for prospective elementary education teachers. Credit will not be given for both KINE 4360 and KINE 4200. Admission to Teacher Education.

KINE 4400/4403 APPLIED ANATOMY FOR THE ALLIED HEALTH PROFESSIONAL (3) LEC. 3. Study of skeletal anatomy with an applied approach. May count either KINE 4400 or KINE 4403.

KINE 4450/4453 PHYSICAL ACTIVITY AND PUBLIC HEALTH (3) LEC. 3. Basic principles of epidemiology; health benefits of physical activity; strategies to promote physical activity at the individual and community levels. Departmental approval.

KINE 4500 INDIVIDUAL AND GROUP FITNESS INSTRUCTION (3) LEC. 3. Principles of exercise prescription and field assessment techniques to develop, implement and evaluate individual and group exercise programs.

KINE 4560/4563 SPORT TECHNIQUE AND MOVEMENT ANALYSIS (3) LEC. 3. Skills and knowledge for observing, evaluating, and correcting movement patterns. May count either KINE 4560 or KINE 4563.

KINE 4600 STRENGTH DEVELOPMENT (3) LEC. 3. Basic concepts and principles of strength development.

KINE 4610 MOTOR DEVELOPMENT ACROSS THE LIFE SPAN (3) LEC. 3. Understanding principles related to motor development across the life span.

KINE 4620/4623 EXERCISE AND SPORT PSYCHOLOGY (3) LEC. 3. Role of psychological factors in sport, exercise and physical activity.

KINE 4630/4633 STRENGTH AND CONDITIONING PREPARATION (3) LEC. 3. Coreq., KINE 4920Preparation as a National Strength and Conditioning Specialist. Departmental approval. May count either KINE 4630 or KINE 4633.

KINE 4640 PHYSICAL CONDITIONING AND SPEED (3) LEC. 3. Basic concepts and principles of physical conditioning and speed.

KINE 4690/4693 CORRECTIVE EXERCISE SPECIALIST PREPARATION (3) LEC. 3. Coreq., KINE 4920Preparation for the National Academy of Sports Medicine corrective exercise specialist examination. May count either KINE 4690 or KINE 4693.

KINE 4720 MEASUREMENT AND QUANTITATIVE ANALYSIS IN EXERCISE SCIENCE (3) LEC. 3. Pr., (KINE 3020 or HLHP 3020) and STAT 2510.Concepts and statistics related to assessing human performance. Departmental approval.

KINE 4760 INTRODUCTION TO EXERCISE SCIENCE RESEARCH (3) LEC. 3. Research literature, experimental design and research interpretation in exercise science.

KINE 4780 EXERCISE SCIENCE RESEARCH (3) LEC. 3. SU. Pr., (HLHP 4760 or KINE 4760).Development of a research proposal including the introduction, review of literature, methods, experimental design and statistics.

KINE 4860/4863 EXERCISE PROGRAMMING FOR SPECIAL POPULATIONS (3) LEC. 3. Principles of exercise prescription, programming and field assessment techniques to develop, implement and evaluate exercise programs for special populations. May count either KINE 4860 or KINE 4863.

KINE 4880 TRAINING AND CONDITIONING PROGRAMMING (3) LEC. 3. Pr., KINE 4600 and KINE 4640.Skills and knowledge related to sport specific annual training regimens.

KINE 4900 DIRECTED STUDIES (1-6) IND. SU. In-depth study of specific topics. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

KINE 4910 PRACTICUM (1-6) AAB/PRA. SU. Application of basic concepts to specific work environment. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

KINE 4920 INTERNSHIP (1-12) AAB/IND. SU. Supervised work experience in schools, fitness or rehabilitation settings. Two hours of work experience per week for each hour course credit. Course may be repeated for a maximum of 12 credit hours.

KINE 4970 SPECIAL TOPICS (1-3) AAB. Advanced presentation of critical issues in physical education, health promotion or exercise science. Course may be repeated with change in topic.

KINE 4997 HONORS THESIS (1-3) LEC. Pr., Honors College.Departmental approval. Course may be repeated for a maximum of 3 credit hours.

KINE 5200 RESEARCH PROJECT IN PHYSICAL EDUCATION (3) LEC. 3. Pr., (HLHP 4200 or KINE 4200) and (HLHP 4300 or KINE 4300).Focus on action research in teaching and learning in physical education in schools. May count either KINE 5200 or KINE 6200.

KINE 5250 INSTRUCTIONAL SUPERVISION FOR PHYSICAL EDUCATION (2) LEC. 2. Pr., (HLHP 4200 or KINE 4200) and (HLHP 4300 or KINE 4300).Development of systematic observation systems for providing feedback to teachers and strategies for monitoring progress. May count either KINE 5250 or KINE 6250.

KINE 5300 ADVOCACY IN PHYSICAL EDUCATION (2) LEC. 2. Pr., (HLHP 4200 or KINE 4200) and (HLHP 4300 or KINE 4300).Strategies for development of advocacy programs in physical education. May count either KINE 5300 or KINE 6300.

KINE 5400 EXERCISE PRESCRIPTION FOR NORMAL AND SPECIAL POPULATIONS (3) LEC. 3. Pr., (HLHP 3680 or KINE 3680).Principles of exercise prescription for normal and special populations with emphasis on specific exercise strategies in elderly, obese, hypertensive and hyperlipidemic populations. May count KINE 5400, KINE 6400, or KINE 6406.

KINE 5500 EXERCISE TECHNOLOGY I: PRINCIPLES OF EXERCISE TESTING AND INTERPRETATION (4) LEC. 2. LAB. 4. Pr., P/ C, KINE 3680.Concept and skill development in physiologic testing, test selection, and interpretation in normal and special populations. CPR certification must be obtained prior to or during course. HLHP 3680 or KINE 3680 must be taken prior to this course or KINE 3680 must be taken with course. May count either KINE 5500 or KINE 6500.

KINE 5550 EXERCISE TECHNOLOGY II: APPLIED EXERCISE TESTING AND INTERPRETATION (4) LEC. 1. LAB. 6. Pr., (HLHP 5500 or KINE 5500). Practical experience in cardiovascular and musculoskeletal exercise evaluation and prescription; interpretation of exercise test results for exercise prescription and health risk stratification. CPR certification must be current. May count KINE 5550 or KINE 6550.

KINE 5600 PHYSIOLOGICAL BASIS OF TRAINING AND CONDITIONING (3) LEC. 2. LAB. 2. Pr., (HLHP 3680 or KINE 3680). Physiological adaptations to training and conditioning for optimizing sport performance. May count either KINE 5600 or KINE 6600.

KINE 5820 SPORT MANAGEMENT (3) LEC. 3. This course is designed to give students critical skills in understanding and analyzing a number of social issues as they relate to sport. May count either KINE 5820 or KINE 6820.

KINE 5920 INTERNSHIP (1-12) INT. SU. Supervised work experiences in schools, fitness or rehabilitation settings. Two hours of work experience per week for each hour course credit. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

KINE 6200 RESEARCH PROJECT IN PHYSICAL EDUCATION (3) LEC. 3. Pr., (HLHP 4200 or KINE 4200) and (HLHP 4300 or KINE 4300). Focus on action research in teaching and learning in physical education in schools. May count either KINE 5200 or KINE 6200.

KINE 6250 INSTRUCTIONAL SUPERVISION FOR PHYSICAL EDUCATION (2) LEC. 2. Pr., (HLHP 4200 or KINE 4200) and (HLHP 4300 or KINE 4300). Development of systematic observation systems for providing feedback to teachers and strategies for monitoring progress. May count either KINE 5250 or KINE 6250.

KINE 6300 ADVOCACY IN PHYSICAL EDUCATION (2) LEC. 2. Pr., (HLHP 4200 or KINE 4200) and (HLHP 4300 or KINE 4300). Strategies for development of advocacy programs in physical education. May count either KINE 5300 or KINE 6300.

KINE 6400/6406 EXERCISE PRESCRIPTION FOR NORMAL AND SPECIAL POPULATIONS (3) LEC. 3. Pr., (HLHP 3680 or KINE 3680). Principles of exercise prescription for normal and special populations with emphasis on specific exercise strategies in elderly, obese, hypertensive and hyperlipidemic populations. May count KINE 5400, KINE 6400, or KINE 6406.

KINE 6500 EXERCISE TECHNOLOGY I: PRINCIPLES OF EXERCISE TESTING AND INTERPRETATION (4) LEC. 2. LAB. 4. Pr., (HLHP 3680 or KINE 3680). Concept and skill development in physiologic testing, test selection, and interpretations in normal and special populations. CPR certification must be obtained prior to or during course. HLHP 3680 or KINE 3680 must be taken prior to course or KINE 3680 must be taken with course. May count either KINE 5500 or KINE 6500.

KINE 6550 EXERCISE TECHNOLOGY II: APPLIED EXERCISE TESTING AND INTERPRETATION (4) LEC. 1. LAB. 6. Pr., HLHP 5500 or (KINE 6500 or HLHP 6500). Practical experience in cardiovascular and musculoskeletal exercise evaluation and prescription; interpretation of exercise test results for exercise prescription and health risk stratification. CPR certification must be current. May count either KINE 5550 or KINE 6550.

KINE 6600 PHYSIOLOGICAL BASIS OF TRAINING AND CONDITIONING (3) LEC. 2. LAB. 2. Pr., (HLHP 3680 or KINE 3680). Physiological adaptations to training and conditioning for sport performance. May count either KINE 5600 or KINE 6600.

KINE 6820 SPORT MANAGEMENT (3) LEC. 3. This course is designed to give students critical skills in understanding and analyzing a number of social issues as they relate to sport. May count either KINE 5820 or KINE 6820.

KINE 6920 INTERNSHIP (1-12) IND. SU. Supervised work experiences in schools, fitness or rehabilitation settings. Departmental approval.

KINE 7010 RESEARCH METHODS IN PHYSICAL ACTIVITY (3) LEC. 3. Study of research methods and analysis of current research in physical education, health promotion, and exercise science.

KINE 7200 CURRICULUM AND TEACHING IN PHYSICAL EDUCATION (3) LEC. 3. Issues in developing and critiquing curricula in physical education.

KINE 7250 EVALUATION OF PROGRAMS AND ASSESSMENT OF STUDENTS IN PHYSICAL EDUCATION (3) LEC. 3. Development of tools for assessment of student learning and evaluation of physical education programs.

KINE 7260 INDIVIDUALS WITH DISABILITIES IN PHYSICAL EDUCATION (3) LEC. 3. Developing inclusive physical activity programs for children and adolescents with disabilities in physical education.

KINE 7280 NATURALISTIC INQUIRY IN PHYSICAL ACTIVITY SETTINGS (3) LEC. 3. Pr., (HLHP 7010 or KINE 7010). Exploration of naturalistic inquiry in physical activity and educational settings.

KINE 7300 CONTENT AND PEDAGOGY IN PHYSICAL EDUCATION (3) LEC. 3. Instructional strategies and content for elementary and secondary physical education.

KINE 7350 ORGANIZATION AND ANALYSIS OF INSTRUCTION IN PHYSICAL EDUCATION (3) LEC. 3. Focus on the teaching-learning process in physical education.

KINE 7380 INTEGRATING CLASSROOM CONCEPTS (3) LEC. 3. Relationship of developmental foundations of young children and programming of physical activities.

KINE 7400/7406 ADVANCED ANATOMICAL PRINCIPLES (3) LEC. 3. Pr., P/C, KINE 7410 or P/C, KINE 7416. Clinically oriented human anatomy experience, designed to provide the student with an applied methodology to interact and utilize anatomical knowledge. May count either KINE 7400 or KINE 7406.

KINE 7410/7416 ADVANCED ANATOMICAL PRINCIPLES LAB (1) LAB. 2. Pr., P/C, KINE 7400 or P/C, KINE 7406. Clinically oriented human anatomy experience, designed to provide the student with an applied methodology to interact and utilize anatomical knowledge.

KINE 7420/7426 BIOMECHANICS OF SKILL ANALYSIS: DARTFISH I (3) LEC. 3. Introductory approach to skill analysis as well as the use of the software program Dartfish. May count either KINE 7420 or KINE 7426.

KINE 7430/7436 BIOMECHANICS OF SKILL ANALYSIS: DARTFISH II (3) LEC. 3. Pr., KINE 7420 or KINE 7426. Advanced approach to skill analysis as well as the use of the software program Dartfish. May count either KINE 7430 or KINE 7436.

KINE 7570 EXERCISE ELECTROCARDIOGRAPHY (3) LEC. 3. Pr., (HLHP 3680 or KINE 3680). Electrocardiography from an exercise scientist's perspective; recognition of normal and abnormal electrocardiographic patterns at rest and during exercise.

KINE 7620/7626 PRINCIPLES OF BIOMECHANICS IN HUMAN MOVEMENT (3) LEC. 3. Pr., (HLHP 3620 or KINE 3620). Biomechanical principles and laws with applications to human movement in sport, exercise and daily activities. Departmental approval. May count either KINE 7620 or KINE 7626.

KINE 7650 ADVANCED MOTOR LEARNING AND PERFORMANCE (3) LEC. 3. Pr., (HLHP 3650 or KINE 3650). Theories, experimental studies, and current issues in the acquisition, performance, and retention of motor skills. Departmental approval.

KINE 7660 BIOMECHANICS OF SPORT INJURY AND REHABILITATION (3) LEC. 3. Pr., (HLHP 7620 or KINE 7620). Biomechanical properties of the human body as related to injuries and rehabilitation in sport and daily activities.

KINE 7670 LAB TECHNIQUES IN BIOMECHANICS (3) LEC. 1. LAB. 2. Pr., (HLHP 7620 or KINE 7620). Study of equipment and standing practices utilized by a biomechanist in measuring and analyzing motion.

KINE 7680 ADVANCED PHYSIOLOGY OF EXERCISE I (3) LEC. 3. Pr., (HLHP 3680 or KINE 3680). Physiological responses to exercise and control of metabolism, the cardiovascular system, and the respiratory system during acute exercise and training. Departmental approval.

KINE 7700 ADVANCED PHYSIOLOGY OF EXERCISE II (3) LEC. 3. Pr., (HLHP 3680 or KINE 3680). Temperature regulation and endocrine response to exercise; physiological responses and adaptations to aerobic training, strength training, and environmental extremes; limiting factors and fatigue in exercise.

KINE 7710 LAB TECHNIQUES IN EXERCISE PHYSIOLOGY (3) LEC. 1. LAB. 4. Pr., (HLHP 7680 or KINE 7680). Techniques for measuring and evaluating physical performance.

KINE 7730 NEUROMOTOR CONTROL (3) LEC. 3. Pr., (HLHP 3650 or KINE 3650). Structure and function of the central and peripheral systems underlying human motor control. Departmental approval.

KINE 7740 ADVANCED MOTOR DEVELOPMENT (3) LEC. 3. Pr., (HLHP 4610 or KINE 4610). Examination of theoretical and empirical issues in motor development across the life span. Departmental approval.

KINE 7750 ADVANCED SPORT PSYCHOLOGY (3) LEC. 3. Pr., (HLHP 4620 or KINE 4620). Examination of psychological factors that influence athletic performance. Or equivalent, or departmental approval.

KINE 7780 EXERCISE MOTIVATION AND ADHERENCE (3) LEC. 3. Pr., (HLHP 4620 or KINE 4620). Theoretical foundations and recent research in exercise motivation and adherence. Or equivalent.

KINE 7790 MOTOR BEHAVIOR OF INDIVIDUALS WITH DISABILITIES (3) LEC. 3. Pr., (HLHP 7650 or KINE 7650). Examination of motor behavior characteristics of individuals with disabilities.

KINE 7900 DIRECTED STUDIES (1-3) IND. SU. In-depth study of specific topics. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

KINE 7910 PRACTICUM (1-3) PRA. Application of concepts to specific work environment. Course may be repeated for a maximum of 6 credit hours. Departmental approval.

KINE 7920 INTERNSHIP (1-10) INT. SU. Supervised work experiences in schools, fitness or rehabilitation settings. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

KINE 7930 NON-THESIS RESEARCH PROJECT (1-6) IND. SU. Pr., KINE 7010. Continuation/completion of a scientific research project that culminates into a written and oral presentation. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

KINE 7950 SEMINAR (1-3) SEM. SU. Course may be repeated for a maximum of 3 credit hours.

KINE 7960 SPECIAL PROBLEMS (1-3) IND. SU. Critical analysis of current and classical research and writings. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

KINE 7970 SPECIAL TOPICS (1-3) LEC. Advanced presentation of critical issues in physical education, health promotion, or exercise science. Course may be repeated with change in topic.

KINE 7980 RESEARCH PROJECT IN KINESIOLOGY (1-6) IND. SU. Pr., KINE 7010. Departmental approval. Completion of a scientific research project in Kinesiology that culminates into a written and oral presentation. Course may be repeated for a maximum of 6 credit hours.

KINE 7990 RESEARCH AND THESIS (1-10) IND. Course may be repeated with change in topics.

KINE 8710 SCIENTIFIC COMMUNICATION IN EXERCISE SCIENCE (3) LEC. 3. Pr., (HLHP 7010 or KINE 7010). In-depth analysis of the major formats for scientific communication and the peer-review process in exercise science. Or equivalent.

KINE 8750 THREE-DIMENSIONAL ANALYSIS OF HUMAN MOVEMENT (3) LEC. 3. Pr., (HLHP 7620 or HLHP 7620). Three-dimensional nature of body segments in human movement, with emphasis on data processing and modeling techniques.

KINE 8760 PHYSICAL ACTIVITY EPIDEMIOLOGY (3) LEC. 3. Pr., (HLHP 7010 or KINE 7010) and (HLHP 7680 or KINE 7680). Development of analytic skills to evaluate and/or conduct population-based research related to physical activity and disease.

KINE 8770 NEUROMUSCULAR ASPECTS OF EXERCISE AND TRAINING (3) LEC. 3. Pr., (HLHP 7680 or KINE 7680) and (HLHP 7700 or KINE 7700). Examination of neuromuscular mechanisms that allow humans to perform work, including energy output, neural integration, energy metabolism and adaptations to training. Or departmental approval.

KINE 8780 BIOCHEMISTRY OF EXERCISE (3) LEC. 3. Pr., (HLHP 7680 or KINE 7680) and (HLHP 7700 or KINE 7700). Regulation of the metabolic pathways of energy metabolism with emphasis on the energetic response to acute exercise and exercise training. Or departmental approval.

KINE 8900 DIRECTED STUDIES (1-3) IND. SU. In-depth study of specific topics. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

KINE 8910 PRACTICUM (1-3) PRA. SU. Application of basic concepts to specific work environments. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

KINE 8920 INTERNSHIP (1-10) INT. SU. Supervised work experiences in schools, fitness and rehabilitation settings. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

KINE 8930 DIRECTED FIELD EXPERIENCES (1-10) FLD. SU. Field studies away from campus. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

KINE 8950 SEMINAR (1-3) SEM. SU. Course may be repeated for a maximum of 3 credit hours.

KINE 8960 SPECIAL PROBLEMS (1-3) IND. SU. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

KINE 8970 SPECIAL TOPICS (1-3) LEC. Advanced presentation of critical issues in physical education. health promotion, or exercise science. Course be repeated with change in topic.

KINE 8980 FIELD PROJECT (1-6) FLD.

KINE 8990 RESEARCH AND DISSERTATION (1-10) DSR. Field project away from campus. Course may be repeated for a maximum of 9 credit hours. Departmental approval. Course may be repeated with change in topics.

Lab Technology - LABT

Courses

LABT 1010 ORIENTATION (1) LEC. 1. Aims, objectives and requirements for careers in medical and laboratory technology.

LABT 4010 HEMATOLOGY (5) LEC. 3. LAB. 6. Pr., CHEM 2070. Origin, maturation, morphology, function of normal blood cells and abnormalities in diseased blood. Routine and specialty hematological laboratory techniques.

LABT 4050 CLINICAL IMMUNOHEMATOLOGY/PARASITOLOGY (5) LEC. 3. LAB. 6. Pr., CHEM 2070 and BIOL 1020. Immunogenetics, clinical significance of blood group antigens and antibodies, theory and techniques of serological study of human blood groups. Human parasites, life cycles and disease processes.

LABT 4250 CLINICAL BIOCHEMISTRY/INSTRUMENTATION (4) LEC. 3. LAB. 3. Pr., BCHE 5180 or BCHE 3200. Biochemistry/physiology of systems in the body of elements in body fluids during the normal and abnormal processes. Theoretical and practical application of Lab techniques, atomic absorption, gaschromatograph-FID, HPLC, spectroscopy, spectrophotometry, ion selective electrodes and RIA used in analysis of body fluids.

LABT 4910 CLINICAL PRACTICUM (0) PRA.

LABT 4920 CLINICAL INTERNSHIP (0) PRA. Pr., LABT 4910. Final term of clinical internship.

Landscape Architecture - LAND

Courses

LAND 5110 BASIC LANDSCAPE ARCHITECTURAL DESIGN (6) STU. 12. Landscape architectural design studio emphasizing research, planning and design problems at neighborhood to community scales.

LAND 5130 STUDIO I: FOUNDATION STUDIO (5) STU. 5. Teaches foundational skills (drawing, modeling, and multiple representational skills) that are necessary to progress into future design studios.

LAND 5131 STUDIO I: FIELD STUDIES (1) FLD. 1. Field studies and travel related to studio. Departmental approval.

LAND 5140 HISTORY I: LANDSCAPE MODERNISM (3) LEC. 3. Investigates issues in the modern history of landscape architecture, from early twentieth century to the present day.

LAND 5150 CONSTRUCTION I (2) LEC. 2. Fundamental skills needed to analyze, understand, and manipulate landform with respect to form, grading and drainage. Departmental approval.

LAND 5160 GRAPHIC STUDIES I (2) LEC. 2. Develops the use of different drawing and presentation techniques to clearly communication design ideas, specifically by means of sketching, watercolors, colored pencils and drafting techniques. Departmental approval.

LAND 5170 GRAPHIC STUDIES II (3) LEC. 3. Graphic and communication theories and skills in a variety of media. Photoshop, Illustrator, Indesign and AutoCAD. Departmental approval.

LAND 5210 URBAN HOUSING STUDIO (6) STU. 12. Spatial/formal qualities of multi-unit housing utilizing the wealth of housing typologies erected in North America.

LAND 5230 STUDIO II (5) STU. 5. Iterative design processes that project and test design scenarios, refining propositions based on multiple performance criteria in relation to site specificity and community context. Departmental approval. May count either LAND 5230 or 6230.

LAND 5231 FIELD STUDIES II (1) FLD. 1. Field studies and travel related to studio. Departmental approval. May count either LAND 5231 or 6231

LAND 5240 TRADITIONS OF LANDSCAPE MAKING (3) LEC. 3. Pr., LAND 5140. Major transformation in the broad history of landscape architecture from antiquity to the end of the nineteenth century, with particular attention to canonical gardens and landscapes. Departmental approval. May count either LAND 5240 or 6240.

LAND 5250 CONSTRUCTION II (2) LEC. 2. Fundamentals of design detailing of site assemblies, with emphasis on material research and construction methods. Departmental approval. May count either LAND 5250 or 6250.

LAND 5260 GRAPHIC STUDIES III (3) SEM. 3. Pr., LAND 5150. Fundamental concepts of Geographic Information Systems are used to create visual frameworks for gathering, interpreting, and sharing spatial data in landscape architecture practice. Departmental approval.

LAND 5270 PLANT SPATIALITY (2) LEC. 2. Studies of innovative design with plants, exploring issues plant association, strata, and spatiality. Departmental approval. May count either LAND 5270 or 6270.

LAND 5280 LANDSCAPE ELEMENTS: EARTH, FIRE AND WATER (3) LEC. 3. Introduces students to the basic elements used in the design of the built landscape.

LAND 5310 INDEPENDENT STUDY THESIS (6) STU. 12. Extensive exploration and development of a landscape architecture issue of the students choice beyond the level associated with entry to the profession. Level-III standing; departmental approval.

LAND 5330 STUDIO III (5) LEC. 5. Pr., LAND 5230 or LAND 6230. Coreq., LAND 5331 and LAND 6331 Investigates eco-cultural relationships between regional, metropolitan and urban scales with emphasis on physical and social flows. Departmental approval.

LAND 5331 FIELD STUDIES III (1) FLD. 1. SU. Pr., LAND 6230 or LAND 5230. Coreq., LAND 6330 and LAND 5330 Field studies and travel related to studio. Departmental approval.

LAND 5340 URBAN STUDIES I: AMERICAN URBAN LANDSCAPES (3) SEM. 3. Pr., LAND 5230. This course explores the evolution of the American landscape, its current conditions, and prospects. Students learn to read the landscape, reflect on its transformation and become responsible critics. Departmental approval.

LAND 5350 CONSTRUCTION III: HYDROLOGIES (2) LEC. 1. LAB. 2. Pr., LAND 5230. This course emphasizes stormwater research, planning and design. Students learn technical skills and design techniques needed to construct projects with environmental integrity and aesthetic appeal. Departmental approval.

LAND 5360 DYNAMIC SYSTEMS I: URBAN ECOLOGIES (3) LEC. 3. Pr., LAND 5230. This course provides an overview of natural ecological systems and how they can be preserved or restored to enhance human and ecological health through sustainable design. Departmental approval.

LAND 5370 PLANT EPHEMERALITY (2) LEC. 2. Pr., LAND 5230. Studies of innovative design with plants, exploring issues of plant phenology and dynamic lifecycle conditions. Departmental approval.

LAND 5430 URBAN THEORY (3) LEC. 3. An introduction to contemporary theories of urban design, geography, and cultural theory using case study methods.

LAND 5500 LAND ETHICS AND ENVIRONMENTAL RESPONSIBILITY (3) LEC. 3. Explores the ethical relationship of man and nature.

LAND 5510 ENVIRONMENTAL PLANNING STUDIO (6) STU. 12. Natural systems analysis as a basis for site planning and large scale facilities design. Level-II standing.

LAND 5520 LANDSCAPE ARCHITECTURE DESIGN STUDIO (6) STU. 12. Pr., LAND 5110. A continuation of the basic design studio emphasizing research, planning, and design problems at community to regional scales.

LAND 5540 HISTORY OF LANDSCAPE ARCHITECTURE II (3) LEC. 3. Explores the built landscape from the 17th Century to the present including designs in America, Europe and Asia.

LAND 5590 INDEPENDENT STUDY THESIS (6) STU. 12. A major integrative investigation of a focused problem area, defined and pursued by the student under the direction of a faculty member.

LAND 6130 STUDIO I: FOUNDATION STUDIO (5) AAB/STU. 5. Teaches foundational skills (drawing, modeling, and multiple representational skills) that are necessary to progress into future design studios.

LAND 6131 STUDIO I: FIELD STUDIES (1) AAB/FLD. 1. Field studies and travel related to studio. Departmental approval.

LAND 6140 HISTORY I: LANDSCAPE MODERNISM (3) LEC. 3. Investigates issues in the modern history of landscape architecture, from early twentieth century to the present day.

LAND 6150 CONSTRUCTION I (2) LEC. 2. Fundamental skills needed to analyze, understand, and manipulate landform with respect to form, grading and drainage. Departmental approval.

LAND 6160 GRAPHIC STUDIES I (2) LEC. 2. Develops the use of different drawing and presentation techniques to clearly communicate design ideas, specifically by means of sketching, watercolors, colored pencils and drafting techniques. Departmental approval.

LAND 6170 GRAPHIC STUDIES II (3) LEC. 3. Graphic and communication theories and skills in a variety of media. Photoshop, Illustrator, Indesign and AutoCAD. Departmental approval.

LAND 6230 STUDIO II (5) STU. 5. Iterative design processes that project and test design scenarios, refining propositions based on multiple performance criteria in relation to site specificity and community context. Departmental approval. May either LAND 5230 or 6230.

LAND 6231 FIELD STUDIES II (1) FLD. 1. Field studies and travel related to studio. Departmental approval. May count either LAND 5231 or 6231.

LAND 6240 TRADITIONS OF LANDSCAPE MAKING (3) LEC. 3. Pr., LAND 6140. Major transformation in the broad history of landscape architecture from antiquity to the end of the nineteenth century, with particular attention to canonical gardens and landscapes. Departmental approval. May count either LAND 5240 or 6240.

LAND 6250 CONSTRUCTION II (2) LEC. 2. Fundamentals of design detailing of site assemblies, with emphasis on material research and construction methods. Departmental approval. May count either LAND 5250 or 6250.

LAND 6260 GRAPHIC STUDIES III (3) SEM. 3. Fundamental concepts of Geographic Information Systems are used to create visual frameworks for gathering, interpreting, and sharing spatial data in landscape architecture practice. Departmental approval.

LAND 6270 PLANT SPATIALITY (2) LEC. 2. Studies of innovative design with plants, exploring issues plant association, strata, and spatiality. Departmental approval. May count either LAND 5270 or 6270.

LAND 6330 STUDIO III (5) LEC. 5. Pr., LAND 5230 or LAND 6230. Coreq., LAND 6331 and LAND 5331. Investigates eco-cultural relationships between regional, metropolitan and urban scales with emphasis on physical and social flows. Departmental approval.

LAND 6331 FIELD STUDIES III (1) FLD. 1. Pr., LAND 5230 or LAND 6230. Coreq., LAND 6330 and LAND 5330. Field studies and travel related to studio. Departmental approval.

LAND 6340 URBAN STUDIES I: AMERICAN URBAN LANDSCAPES (3) SEM. 3. Pr., LAND 5230 or LAND 6230. This course explores the evolution of the American landscape, its current conditions, and prospects. Students learn to read the landscape, reflect on its transformation and become responsible critics. Departmental approval.

LAND 6350 CONSTRUCTION III: HYDROLOGIES (2) LEC. 1. LAB. 2. Pr., LAND 5230 or LAND 6230. This course emphasizes stormwater research, planning and design. Students learn technical skills and design techniques needed to construct projects with environmental integrity and aesthetic appeal. Departmental approval.

LAND 6360 DYNAMIC SYSTEMS I: URBAN ECOLOGIES (3) LEC. 3. Pr., LAND 5230 or LAND 6230. This course provides an overview of natural ecological systems and how they can be preserved or restored to enhance human and ecological health through sustainable design. Departmental approval.

LAND 6370 PLANT EPHEMERALITY (2) LEC. 2. Pr., LAND 5230 or LAND 6230. Studies of innovative design with plants, exploring issues of plant phenology and dynamic lifecycle conditions. Departmental approval.

LAND 6430 URBAN THEORY (3) LEC. 3. An introduction to contemporary theories of urban design, geography, and cultural theory using case study methods.

LAND 7130 STUDIO IV (5) AAB/STU. 5. Departmental approval. Investigates design strategies and techniques for generating new resilient cultural and environmental practices within complex dynamic conditions.

LAND 7131 FIELD STUDIES (1) AAB/FLD. 1. Pr., P/C, LAND 5230.Coreq., LAND 7130Field studies and travel related to studio. Departmental approval.

LAND 7140 URBAN STUDIES II: GLOBAL URBANISM (3) LEC. 3. Examines the major global drivers of urban change, contemporary theories of international urban design, geography and cultural theory. Departmental approval.

LAND 7170 PLANT FUNCTIONALITY (2) LEC. 2. Departmental approval. Studies of innovative design with plants, exploring the performance of plants and introducing the standards of the nursery industry.

LAND 7180 DYNAMIC SYSTEMS II: REGENERATIVE TECHNOLOGIES (2) LEC. 2. Introduces issues of land contamination and explores remediative and regenerative technologies as design strategies towards new productive futures. Departmental approval.

LAND 7231 STUDIO V: THESIS (6) STU. 6. Pr., LAND 5230.The first part of a two-semester research studio which involves creating a new body of work within a theoretical context and then critically appraising this work and its theoretical framework. Departmental approval.

LAND 7232 STUDIO V: TERMINAL (6) STU. 6. Pr., LAND 5230.This is a directed studio that will ask students to look at a large site within a city and design an individual intervention that reflects the goals and objectives of that studio. Departmental approval.

LAND 7240 THEORIES AND PRACTICES (3) SEM. 3. This is a reading, writing, and discussion seminar that examines the idea that the development of a democratic, civic, diverse social ecology can create more resilient and sustainable communities. Departmental approval.

LAND 7250 CONTEMPORARY ISSUES IN LANDSCAPE ARCHITECTURE (2) LEC. 2. Pr., LAND 5230.Investigation of landscape architectural issues and topics that can be undertaken by means of design, and the development of methodologies and techniques appropriate to such investigation. Departmental approval.

LAND 7280 DYNAMIC SYSTEMS III: REGIONAL ECOLOGIES (3) LEC. 3. This lecture/field laboratory course examines and critiques current landscape problems/crises of multiple scales and scrutinizes the public and private response to these problems. Departmental approval.

LAND 7331 STUDIO VI: THESIS (6) STU. 12. Pr., LAND 5230 or LAND 6230.A continuance of the self-directed design research project that students began in Studio V Thesis, culminating in a public review and exhibition. Departmental approval.

LAND 7332 STUDIO VI: TERMINAL (6) STU. 6. Pr., LAND 5230 or LAND 6230.A directed studio that will ask students to look at a large site within a city and design an individual intervention that reflects the goals and objectives of that studio. Departmental approval.

LAND 7340 PROFESSIONAL PRACTICE (3) LEC. 3. Pr., LAND 5230 or LAND 6230.This course surveys the development and ethics of the profession of landscape architecture and presents an overview of the business and practice of the profession. Departmental approval.

LAND 7350 LANDSCAPE COMPUTER MODELING (2) LEC. 2. Three dimensional and dynamic systems modeling. Departmental approval.

LAND 7410 SEMINAR ON HISTORY AND THEORY (3) LEC. 3. Opportunity for students to further develop expertise expertise through supervised, independent course study or pursue an area of interest that may not be covered in the current curriculum. Departmental approval.

LAND 7420 SEMINAR ON COMMUNITY OUTREACH (3) SEM. 3. Pr., LAND 5230.Opportunity for students to further develop expertise through supervised, independent course study or pursue an area of interest that may not be covered in the current curriculum. Departmental approval.

LAND 7430 SEMINAR ON HYDROLOGY (2) SEM. 2. Pr., LAND 5230.Opportunity for students to further develop expertise through supervised, independent course study or pursue an area of interest that may not be covered in the current curriculum. Departmental approval.

LAND 7440 SEMINAR ON LANDSCAPE COMMUNICATION (3) SEM. 3. Pr., LAND 5230. Opportunity for students to further develop expertise through supervised, independent course study or pursue an area of interest that may not be covered in the current curriculum. Departmental approval.

LAND 7450 SEMINAR ON LANDSCAPE RESEARCH (2) SEM. 298. Pr., LAND 5230. Opportunity for students to further develop expertise through supervised, independent course study or pursue an area of interest that may not be covered in the current curriculum. Departmental approval.

LAND 7530 DESIGN BUILD FELLOWSHIP (3-6) LEC/PRA. Pr., LAND 5230. The design investigation and construction/installation of a landscape proposal. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

LAND 7900 DIRECTED STUDIES (1-3) AAB. An individual student can pursue an area of research beyond the required curriculum. Departmental approval; MLA II standing. Course may be repeated for a maximum of 9 credit hours.

LAND 7960 SPECIAL PROBLEMS IN LANDSCAPE ARCHITECTURE (2) LEC. 2. Investigation of landscape architectural issues and topics that can be undertaken by means of design, and the development of methodologies and techniques appropriate to such investigation. Departmental approval.

LAND 7990 DESIGN THESIS I (6) LEC. 6.

LAND 7991 DESIGN THESIS II (8) LEC. 8.

LAND 7992 RESEARCH SUMMARY (1) LEC. 1.

Liberal Arts, General - LBAR

Courses

LBAR 1010 ORIENTATION TO LIBERAL ARTS (1) LEC. 1. SU. This course is designed to help students who are currently undeclared liberal arts students explore the various majors and opportunities the College of Liberal Arts provides.

LBAR 3910 PRACTICUM IN LIBERAL ARTS (1-3) AAB. Focused civic engagement or study abroad experiences designed to develop leadership, social responsibility, and cross-cultural awareness. Course may be repeated for a maximum of 6 credit hours.

Management - MNGT

Courses

MNGT 3100 PRINCIPLES OF MANAGEMENT (3) LEC. 3. Management functions and the applications of management principles in organization. Junior standing.

MNGT 3107 HONORS PRINCIPLES OF MANAGEMENT (3) LEC. 3. Pr., Honors College. Management functions and the applications of management principles in organization. Fall, Spring. Junior standing.

MNGT 3460 ORGANIZATIONAL BEHAVIOR (3) LEC. 3. Pr., P/C, MNGT 3100 or P/C, MNGT 3810. Study, analysis and application of theories and techniques for understanding, predicting and managing human behavior in the organizational context.

MNGT 3810 MANAGEMENT FOUNDATIONS (3) LEC. 3. Management Foundations is a broad based introductory course that will focus on management functions and applications of management principles. This course is not open to undergraduates majoring in business. Junior standing.

MNGT 3970 GLOBAL PERSPECTIVES IN BUSINESS IN SPAIN (6) LEC. 6. The objective of the course is to learn about business in Spain by immersing the student totally into the Spain language and culture. Course may be repeated for a maximum of 12 credit hours.

MNGT 4100 MANAGEMENT IN GLOBAL BUSINESS ENVIRONMENT (3) LEC. 3. Pr., MNGT 3100 or MNGT 3107. Issues unique to managing operations in the global business environment.

MNGT 4400 ORGANIZATIONAL CHANGE (3) LEC. 3. Pr., MNGT 3100. The complexities involved in implementing change in organizations.

MNGT 4600 COMMUNITY SERVICE PROJECT (1) LEC. 1. Application of applying business principles to applications learned from working with actual businesses/community issues.

MNGT 4610 INTERNATIONAL FIELD ANALYSIS PROJECT COURSE (3) LEC. 3. Field analysis team projects with local or multinational organizations in a foreign county. Course will be taught in conjunction with COB International Studies Programs.

MNGT 4690 ETHICAL ISSUE IN MANAGEMENT (3) LEC. 3. Pr., MNGT 3100 and FINC 3610. The course is designed to help students gain a better understanding of how ethical dilemmas can impact managerial decisions.

MNGT 4800 STRATEGIC MANAGEMENT (3) LEC. 3. Pr., MKTG 3310 and MNGT 3100 and FINC 3610. Objectives, strategy, and policies pertaining to a total organization. Problem-solving and the relationship between the functional areas of an organization. College of Business Information Technology requirement.

MNGT 4807 HONORS STRATEGIC MANAGEMENT (3) LEC. 3. Pr., Honors College. FINC 3617 and MKTG 3317 and MNGT 3107. Objectives, strategy, and policies pertaining to a total organization. Problem-solving and the relationship between the functional areas of an organization.

MNGT 4890 STRATEGIC ENVIRONMENTAL MANAGEMENT (3) LEC. 3. Pr., MNGT 3100 or MNGT 3107. Course will examine the continuous relationship between the natural environment, strategy, and competitive advantage from both a domestic and international perspective.

MNGT 4920 INTERNSHIP (1-6) AAB/INT. SU. Pr., 2.50 GPA. MNGT 3100. Approval by departmental intern program committee. Course may be repeated for a maximum of 6 credit hours.

MNGT 4950 SEMINAR IN MANAGEMENT (1-10) AAB/SEM. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

MNGT 4967 HONORS SPECIAL PROBLEMS (1-3) LEC. Pr., Honors College. Directed readings on a topic of special interest. Course may be repeated for a maximum of 3 credit hours.

MNGT 4997 HONORS THESIS (1-3) LEC. Pr., Honors College. Directed honors thesis research. Course may be repeated for a maximum of 3 credit hours.

MNGT 5560 LEADERSHIP (3) LEC. 3. Facilitates the understanding of leadership and allows student to examine their own leadership behaviors.

MNGT 5900 DIRECTED STUDIES (1-3) IND. SU. Independent study on current topics in management. Course may be repeated for a maximum of 6 credit hours.

MNGT 5960 SPECIAL PROBLEMS IN MANAGEMENT (1-3) AAB/IND. Independent study investigating current literature in management. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

MNGT 6300/6306 THE BUSINESS OF SPORTS (3) LEC. 3. Pr., STAT 2610 and (MNGT 3100 or MNGT 3910) and ECON 2020. Business aspects of sports teams including sources of revenue, labor market, revenue sharing, salary cap and free agency.

MNGT 6350/6356 COMPETITIVE SERVICE ENTERPRISES (3) LEC. 3. Pr., BUSI 7220. Provides MBA students with a working model of service operations and lets them explore how information technology can be used to re-engineer the service process.

MNGT 6560 LEADERSHIP (3) LEC. 3. Facilitates the understanding of leadership and allows student to examine their own leadership behaviors.

MNGT 6900/6906 DIRECTED STUDIES (1-3) IND. SU. Independent study on current topics in management. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

MNGT 6960/6966 SPECIAL PROBLEMS (1-3) AAB/IND. General management theories, practices, and functions in industry and business. Individual work with a designated faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

MNGT 7150/7156 MANAGING ORGANIZATIONAL CHANGE (3) LEC. 3. Advanced study of organizational behavior in individual and group interactions within the environment of business organizations. Departmental approval.

MNGT 7160/7166 STRATEGIC MANAGEMENT OF INNOVATION AND TECHNOLOGY (3) LEC. 3. Development of competitive advantages in high-technology businesses. Examines product/service innovation and technology development and commercialization strategies, and related issues and processes.

MNGT 7420/7426 SEMINAR IN ORGANIZATION CHANGE (3) SEM. 3. Pr., MNGT 7150. The diagnostic and evaluation issues in organizational change.

MNGT 7720/7726 OPERATIONS AND TECHNOLOGY STRATEGY (3) LEC. 3. Pr., P/C, BUSI 7220. Development of upper management decision skills for developing and implementing manufacturing and technology strategies through case analyses and a field project.

MNGT 7970 SPECIAL TOPICS IN MANAGEMENT (3) LEC. 3. Current topics in management. Departmental approval.

MNGT 8030 RESEARCH METHODS IN MANAGEMENT I (3) LEC. 3. Pr., MNGT 8400. Research methodologies used in conducting research with emphasis on empirical organizational behavior research methods. A graduate-level course taken in major field, and working knowledge of SPSS or SAS.

MNGT 8040 RESEARCH METHODS IN MANAGEMENT III (3) LEC. 3. Pr., MNGT 8030. Development of research skills and experience in writing an empirical research article based on research proposal developed in MNGT 8030.

MNGT 8300 SEMINAR IN ADVANCED ORGANIZATION THEORY (3) LEC. 3. Advanced study of theories and research in organization theory. Departmental approval.

MNGT 8310 SEMINAR IN ADVANCED ORGANIZATIONAL BEHAVIOR (3) LEC. 3. Advanced study of theories and research in organizational behavior. Overarching organizational behavior paradigms and theoretical perspectives and research findings at the individual and group levels of analysis. Departmental approval.

MNGT 8320 SEMINAR IN STRATEGY IMPLEMENTATION (3) LEC. 3. Review of the major theoretical perspectives and the empirical literature supporting the research field of strategic management with an emphasis on strategy implementation. Departmental approval.

MNGT 8330 SEMINAR IN STRATEGY FORMULATION (3) LEC. 3. Review of the major theoretical perspectives and the empirical literature supporting the research field of strategic management with an emphasis on strategy formulation. Departmental approval.

MNGT 8400 ADVANCED QUANTITATIVE METHODS FOR MANAGEMENT I (4) LEC. 3. LAB. 1. Pr., STAT 7000. Study of the application of linear regression analysis to business research. First advanced course in applied linear statistics models. STAT 7000 or approved equivalent.

MNGT 8410 ADVANCED QUANTITATIVE METHODS FOR MANAGEMENT II (3) LEC. 3. Pr., MNGT 8400. Introduction to multivariate techniques in business research. Study of the theory and applications of ANOVA, ANCOVA, MANOVA, MANCOVA, Discriminate Analysis & Polytomous Logistic Regression. Departmental approval.

MNGT 8420 ADVANCED QUANTITATIVE METHODS FOR MANAGEMENT III (3) LEC. 3. Pr., STAT 7000 and MNGT 8400 and MNGT 8410 or equivalents. Third course in statistical modeling. Emphasis on applications of Principal Components Analysis, and Structural Equation Modeling to management research.

MNGT 8700 SEMINAR IN ADVANCED HUMAN RESOURCE MANAGEMENT (3) LEC. 3. Examination of empirical issues and technical considerations pertaining to the human resource management function in organizations or departmental approval.

MNGT 8740 COMPENSATION THEORY (3) LEC. 3. An examination of compensation theory, design technology, and research methodologies used in developing and analyzing compensation systems.

MNGT 8800 APPRAISAL AND DEVELOPMENT OF HUMAN RESOURCES (3) LEC. 3. Examination of empirical issues pertaining to the performance appraisal and human resource development functions of organizations. Departmental approval.

MNGT 8820 ORGANIZATIONAL CHANGE RESEARCH METHODS (3) LEC. 3. Pr., MNGT 7150. The study and application of research methods to conduct organizational diagnoses and to assess organizational effectiveness. Special emphasis is placed on qualitative methods.

MNGT 8850 ADVANCED HUMAN RESOURCE SELECTION (3) LEC. 3. Pr., MNGT 7080. Study of the technical considerations involved in the implementation of employee selection programs. Departmental approval; graduate statistics course.

MNGT 8990 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with change in topics.

Marketing - MKTG

Courses

MKTG 3310 PRINCIPLES OF MARKETING (3) LEC. 3. Pr., ECON 2020 or ECON 2027. Study of functions, institutions, and basic problems in marketing of goods and services in a global economy. Credit will not be given for both MKTG 3310 and MKTG 3810. Junior standing.

MKTG 3317 HONORS PRINCIPLES OF MARKETING (3) LEC. 3. Pr., Honors College. ECON 2027 or ECON 2020. Study of functions, institutions, and basic problems of marketing goods and services in a global economy. Junior standing.

MKTG 3810 FOUNDATIONS OF BUSINESS MARKETING (3) LEC. 3. Pr., ECON 2020 or ECON 2027. Foundations of Business Marketing is a broad based introductory course that will focus on marketing functions and applications of marketing principles. This course is not open to undergraduates majoring in business. Junior standing.

MKTG 4050 MISPLACED MARKETING (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Grade of C or better. Management decision making serving consumers' interests in public policy environment when a marketing perspective is lost, misapplied or abused.

MKTG 4320 PROMOTION STRATEGY (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Grade of C or better. Examination of promotional objectives, strategy and tactics in marketing.

MKTG 4330 RETAIL MANAGEMENT (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Grade of C or better. Principles of retail operation: facility location, layout, purchasing, pricing and merchandise control. Credit will not be given for more than one of the following: MKTG 4330, CAHS 5610, and CAHS 6610.

MKTG 4350 SERVICES MARKETING (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Grade of C or better. Examination of marketing in service industries and implementation of service marketing strategies.

MKTG 4360 MARKETING RESEARCH (3) LEC. 3. Pr., (MKTG 3310 or MKTG 3317) and MNGT 3600. Grade of C or better. Research methods in marketing and their application to marketing problems.

MKTG 4370 SALES MANAGEMENT (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Grade of C or better. Principles and practices of organization and administration of sales organizations.

MKTG 4380 MARKETING CHANNEL SYSTEMS (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Grade of C or better. Designing channels of distribution: Objectives, constraints, and alternatives: Motivating, evaluating and controlling channel members.

MKTG 4390 PERSONAL SELLING (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Grade of C or better. Designing channels of distribution: Objectives,

MKTG 4400 INTERNATIONAL MARKETING (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Grade of C or better. Strategy, policy and the variables affecting international marketing decisions. Credit will not be given for more than one of the following: MKTG 4400, CAHS 5610, and CAHS 6610.

MKTG 4410 CONSUMER BEHAVIOR (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Critical review and analysis of possible pragmatic applications of consumer behavior theories used for marketing decision making. May count either CAHS 3800 or MKTG 4410.

MKTG 4500 MARKETING ON THE INTERNET (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317 and COMP 1000. Grade of C or better. Use of electronic media and the Internet for marketing strategy. Passing the University IT exam.

MKTG 4600 GREEN MARKETING (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Grade of C or better. Marketing viewed from an environmental protection perspective and resulting green market strategies.

MKTG 4700 REAL ESTATE MARKETING (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Grade of C or better. Selling strategy for real property, brokerage, management and marketing of real estate.

MKTG 4900 DIRECTED STUDIES (3) AAB/IND. 3. SU. Pr., MKTG 3310 or MKTG 3317. Grade of C or better. Provides a relevant and meaningful learning experience offering advanced research, reading and study in marketing. Departmental approval.

MKTG 4920 MARKETING STUDENT INTERNSHIP PROGRAM (3) AAB/INT. 3. SU. Pr., MKTG 3310 or MKTG 3317. Grade of C or better. Provides a relevant and meaningful work experience in a marketing or marketing-related business, industry or organization. Departmental approval.

MKTG 4970 SPECIAL TOPICS IN MARKETING (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Grade of C or better. Examination of current marketing topics. Course may be repeated for a maximum of 9 credit hours.

MKTG 4980 MARKETING STRATEGY (3) LEC. 3. Pr., MKTG 3310 and MKTG 3410-4997 and MKTG 4360. Pr., Grade of C or better in MKTG 3310 or MKTG 3317 and 9 hours of Marketing Electives. Strategic perspectives of market dynamics in different competitive environments across organizational levels.

MKTG 4997 HONORS THESIS (1-3) IND. Pr., Honors College. and Grade of C or better in MKTG 3310 or MKTG 3317. Provides honor's students with the opportunity to conduct in-depth research. Thesis/research topics will be based on mutual agreement between committee and student. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

MKTG 7050/7056 SOCIAL AND LEGAL ENVIRONMENT OF MARKETING (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. The influence of the social, legal, political, and economic environments on marketing operations. Departmental approval.

MKTG 7310/7316 MARKETING MANAGEMENT (3) LEC. 3. Pr., (BUSI 7110 or BUSI 7716) and BUSI 7120. In-depth analysis of concepts and techniques pertinent to executive decision-making in marketing. Departmental approval.

MKTG 7320/7326 ADVERTISING AND PROMOTION STRATEGY (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Managerial perspective of the marketing communication process. Departmental approval.

MKTG 7330/7336 RETAIL MANAGEMENT (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. A managerial perspective of strategic decision-making and financial aspects of retail organizations. Departmental approval.

MKTG 7350/7356 SERVICES MARKETING (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Examination of marketing in service industries and implementation of service marketing strategies. Departmental approval.

MKTG 7360/7366 MARKETING RESEARCH: METHODOLOGY AND APPLICATIONS (3) LEC. 3. Pr., (MNGT 6040 or MNGT 6046) and (MKTG 3310 or MKTG 3317). Marketing research design, implementation and data analysis for marketing managers. A Departmental approval.

MKTG 7370/7376 SALES MANAGEMENT (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. In-depth study of sales management strategy and tactics. Departmental approval.

MKTG 7390/7396 DATA BASE, DIRECT MARKETING AND SALES PROMOTION (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Fundamental concepts, tools and applications of data base, direct marketing and sales promotion to marketing problems. Departmental approval.

MKTG 7400/7406 GLOBAL MARKETING AND DISTRIBUTION (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. A strategic managerial perspective of global marketing and distribution operations. Departmental approval.

MKTG 7410/7416 ANALYSIS OF CONSUMER BEHAVIOR (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Psychological, sociological, and anthropological foundation of consumer and industrial purchase behavior and their application to marketing decisions. Departmental approval.

MKTG 7500/7506 ELECTRONIC MARKETING (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Ethical and strategic use of electronic media and the Internet for marketing communications and strategy. Departmental approval.

MKTG 7600/7606 ENVIRONMENTALLY CONSCIOUS MARKETING MANAGEMENT (3) LEC. 3. Pr., MNGT 3600 and (MKTG 3310 or MKTG 3317). Advanced marketing strategies with an environmental focus. Departmental approval.

MKTG 7720/7726 NEW PRODUCTS DEVELOPMENT AND MANAGEMENT (3) LEC. 3. Pr., MKTG 3310 or MKTG 3317. Marketing in the process of developing innovative products and services. Departmental approval.

MKTG 7940 INTERNATIONAL MARKETING ABROAD PROGRAM (3-6) FLD. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

MKTG 7970/7976 SPECIAL STUDIES IN MARKETING (3) LEC. 3. Variable content in the marketing area. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

MKTG 7990 RESEARCH AND THESIS (1-10) MST. Departmental approval. Course may be repeated with change in topics.

Materials Engineering - MATL

Courses

MATL 2100 INTRODUCTION TO MATERIALS SCIENCE (3) LEC. 3. The science of solid materials and the relationship between this science and material properties.

MATL 2210 MATERIALS FOR SUSTAINABLE ENERGY PRODUCTION AND STORAGE (1) LEC. 1. Pr., CHEM 1030. Technologies for sustainable energy production and storage, renewable energy conversion, associated materials challenges.

MATL 2220 MATERIALS AND THE ENVIRONMENT (1) LEC. 1. Pr., CHEM 1030. Environmental impact of the production, use and disposal of materials.

MATL 2230 MINERAL RESOURCES: PROCESSING AND AVAILABILITY (1) LEC. 1. Pr., CHEM 1030. Mineral resources for engineering materials; processing and availability of mineral resources.

MATL 3100 ENGINEERING MATERIALS - METALS (3) LEC. 3. Pr., MATL 2100. The relationship among processing, microstructure, properties and engineering applications of metallic materials.

MATL 3101 METALLOGRAPHY LABORATORY (1) LAB. 3. Coreq., MATL 3100. The use of microstructural characterization to understand the relationship between microstructure and properties of metallic materials.

MATL 3200 ENGINEERING MATERIALS POLYMERS (3) LEC. 3. Pr., CHEM 1040. The synthesis, processing, structure and properties of polymers and polymer matrix composites.

MATL 3201 POLYMER AND COMPOSITES LABORATORY (1) LAB. 3. Coreq., MATL 3200. A hands-on lab course on the synthesis, processing, structure and properties of polymers and polymer matrix composites.

MATL 3300 ENGINEERING MATERIALS - CERAMICS (3) LEC. 3. Pr., MATL 2100. The engineering of ceramic materials. Structural property relationships of crystalline and glassy ceramics will be included.

MATL 4500 MATERIALS PROPERTIES AND SELECTION (4) LEC. 3. LAB. 3. Pr., ENGR 2070 and MATL 3100 and MATL 3200. Methods for microstructure control. Design of processing sequences, statistical and economical analysis.

MATL 4930 DIRECTED STUDIES (1-6) IND. SU. Areas of interest within Materials Engineering. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

MATL 4980 SENIOR DESIGN PROJECT (3) LEC. 1. LAB. 6. Students select, design, schedule, fabricate and perform an engineering design project related to Materials Engineering.

MATL 4997 HONORS THESIS (1-6) IND. Pr., Honors College. Individual student directed research and writing of honors thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

MATL 5100 THERMODYNAMICS OF MATERIALS SYSTEMS (3) LEC. 3. Pr., CHEM 1040 and ENGR 2200. Application of thermodynamics to describe phase stability, crystal imperfections, solubility, oxidation, surface, and interface energy and transformations. Departmental approval.

MATL 5200 CRYSTALLOGRAPHY (2) LEC. 2. Pr., PHYS 1610. Principles of crystallography, reciprocal lattice X-ray diffraction techniques. Departmental approval.

MATL 5201 X-RAY DIFFRACTION LABORATORY (1) LAB. 3. Coreq., MATL 5200. Laboratory on the use of x-ray diffraction for materials characterization.

MATL 5300 PHASE TRANSFORMATIONS IN MATERIAL PROCESSING (3) LEC. 3. Pr., MATH 2650 and ENGR 2200. Principles that govern phase transformations in materials systems and control of nucleation and growth, microstructure and morphology. Departmental approval.

MATL 5400 PHYSICS OF SOLIDS (3) LEC. 3. Pr., PHYS 1610. The physics of solid-state materials, including the electronic, optical and magnetic properties of materials. Departmental approval.

MATL 5500 NUMERICAL SIMULATION OF MATERIALS PROCESSING (3) LEC. 3. Pr., MATL 5100 and P/C, MATL 5300. Fundamental principles and applications of computer-aided simulation of transport phenomena in materials processing systems. Departmental approval.

MATL 5600 CORROSION (3) LEC. 3. Pr., CHEM 1040. Fundamentals of chemical degradation of materials. Types and methods for prevention and minimization of corrosion.

MATL 5700 BIOMATERIALS (3) LEC. 3. Interactions between materials and proteins, cells, and tissue as related to medicine and biotechnology including tissue culture, cardiovascular, drug delivery, tissue engineering and other applications. Thermodynamics of protein adsorption. Cell biology of adhesion. Analytical methods, sterilization, and regulations. Departmental approval.

MATL 5750 MICROSTRUCTURE AND MECHANICS OF SKELETAL TISSUES (3) LEC. 3. Pr., MATL 2100 and (ENGR 2070 or MECH 3130). Molecular and cellular microstructural influence over the viscoelastic deformation of the skeletal tissues of bone muscle, ligament, tendon and cartilage; mechanics of failure and biomechanical injury mechanisms; consideration of the physiological processes of adaptive remodeling and healing of tissues; recent developments in orthopedic implant materials.

MATL 5970 INTERMEDIATE SPECIAL TOPICS (1-3) LEC. 1-3. Regular course addressing an advanced specialized area of Materials Engineering not covered by regularly offered courses. Departmental approval. Course may be repeated with change in topics.

MATL 6100/6106 THERMODYNAMICS OF MATERIALS SYSTEMS (3) LEC. 3. Application of thermodynamics to describe phase stability, crystal imperfections, solubility, oxidation, surface and interface energy and transformations. Departmental approval.

MATL 6200/6206 CRYSTALLOGRAPHY (2) LEC. 2. Principles of crystallography, reciprocal lattice X-ray diffraction techniques. Departmental approval.

MATL 6201 X-RAY DIFFRACTION LABORATORY (1) LAB. 3. Coreq., MATL 6200. Laboratory on the use of x-ray diffraction for materials characterization.

MATL 6300/6306 PHASE TRANSFORMATIONS IN MATERIAL PROCESSING (3) LEC. 3. Principles that govern phase transformations in materials systems and control of nucleation and growth, microstructure, and morphology. Departmental approval.

MATL 6400/6406 PHYSICS OF SOLIDS (3) LEC. 3. The physics of solid-state materials, including the electronic, optical, and magnetic properties of materials. Departmental approval.

MATL 6500/6506 NUMERICAL SIMULATION OF MATERIALS PROCESSING (3) LEC. 3. Fundamental principles and applications of computer-aided simulation of transport phenomena in materials processing systems. Departmental approval.

MATL 6600/6606 CORROSION (3) LEC. 3. Pr., CHEM 1040. Fundamentals of chemical degradation of materials. Types and methods for prevention and minimization of corrosion.

MATL 6700/6706 BIOMATERIALS (3) LEC. 3. Interactions between materials and proteins, cells, and tissue as related to medicine and biotechnology including tissue culture, cardiovascular, drug delivery, tissue engineering and other applications. Thermodynamics of protein adsorption. Cell biology of adhesion. Analytical methods, sterilization and regulations. Departmental approval.

MATL 6750/6756 MICROSTRUCTURE AND MECHANICS OF SKELETAL TISSUES (3) LEC. 3. Molecular and cellular microstructural influence over the viscoelastic deformation of the skeletal tissues of bone muscle, ligament, tendon and cartilage; mechanics of failure and biomechanical injury mechanisms; consideration of the physiological processes of adaptive remodeling and healing of tissues; recent developments in orthopedic implant materials. Departmental approval.

MATL 6970/6976 INTERMEDIATE SPECIAL TOPICS IN MATERIALS ENGINEERING (1-3) LEC. 3. Regular course addressing an advanced specialized area of Materials Engineering not covered by regularly offered courses. Departmental approval. Course may be repeated with change in topics.

MATL 7050/7056 DEFORMATION AND FAILURE OF ENGINEERING MATERIALS (3) LEC. 3. Theoretical presentation of the fundamental principles of deformation and failure in materials systems. Departmental approval.

MATL 7110/7116 PHYSICAL METALLURGY AND APPLICATIONS IN METAL FABRICATION (3) LEC. 3. The physical metallurgy underlying processing-structure-property relationships in metals and alloys, with examples from joining processes. Departmental approval.

MATL 7120/7126 ADVANCED CERAMIC MATERIALS (3) LEC. 3. Processing, structure-property relationships and applications of advanced ceramics. Structural and functional applications of ceramics. Departmental approval.

MATL 7130/7136 ADVANCED POLYMER SCIENCE AND TECHNOLOGY (3) LEC. 3. Recent developments in both functional and structural polymers including approaches to synthesis, processing techniques, high-strength materials, electronic polymers, optic polymers, and medical polymers. Departmental approval.

MATL 7140/7146 ADVANCED COMPOSITE MATERIALS (3) LEC. 3. Processing, mechanics structure and properties of composite materials. Emphasis will be placed on an understanding of processing-structure-property relationships in polymer-, ceramic-, and metal-matrix composites. Departmental approval.

MATL 7150/7156 NANOSCALE SCIENCE AND TECHNOLOGY (3) LEC. 3. Synthesis and properties of nanomaterials and nanostructures including: nanograined materials and carbon nanotubes. Nanotechnology including: nanolithography self-assembly, single atom manipulation, nanoelectromechanical devices. Departmental approval.

MATL 7210/7216 PLASTIC DEFORMATION AND STRENGTHENING OF METALLIC MATERIALS (3) LEC. 3. Mechanisms of plastic deformation and strengthening in metals and alloys. The role of dislocations in plastic deformation. Departmental approval.

MATL 7220/7226 RADIATION EFFECTS ON MATERIALS (3) LEC. 3. Theoretical and experimental treatment of the radiation effects and damage in materials as related to the nuclear industry. Departmental approval.

MATL 7230/7236 HIGH TEMPERATURE MATERIALS PERFORMANCE (3) LEC. 3. Theoretical and experimental treatment of the behavior of metals at high temperature. Departmental approval.

MATL 7310/7316 SOLIDIFICATION PROCESSING (3) LEC. 3. Theoretical science and engineering principles that apply to semiconductor crystal growth, ingot solidification, metal casting, welding and rapid solidification processes. Departmental approval.

MATL 7320/7326 THIN FILM SCIENCE AND TECHNOLOGY (3) LEC. 3. Structure, properties, characterization, processing and application of thin films. Departmental approval.

MATL 7410/7416 CHEMICAL SENSORS (3) LEC. 3. Fundamentals and application of chemical sensors. Includes electrolyte, semiconductor and acoustic wave-based sensors. Departmental approval.

MATL 7420/7426 SMART MATERIALS AND STRUCTURES (3) LEC. 3. An introduction to the principles and applications of various sensor, actuator and functionality smart material systems and structures. Departmental approval.

MATL 7430/7436 DIELECTRIC MATERIALS AND DEVICES (3) LEC. 3. Pr., (MATL 6100 or MATL 6106) and MATL 6400. Processing, structure, properties, and application of dielectrics, including physics of dielectrics, material/ device design/fabrication processes, and application of dielectric materials in high-technological industry. Departmental approval.

MATL 7440/7446 MATERIALS PROCESSES MICRO AND NANOSYSTEMS (3) LEC. 3. Materials, processes, and principles involved in manufacturing of micro and nanoelectromechanical systems. Properties of materials used in micromachined transducers as a related to current and potential micro and nanofabrication processes. Departmental approval.

MATL 7450/7456 HIGH TEMPERATURE ELECTROCHEMICAL DEVICES (3) LEC. 3. Principles of solid-state electrochemistry, application to temperature devices including chemical sensors, fuel cells and batteries. Departmental approval.

MATL 7510/7516 ELECTRON MICROSCOPY (3) LEC. 3. Theory, instrumentation, techniques and applications of scanning and transmission electron microscopy. Departmental approval.

MATL 7511 ELECTRON MICROSCOPY LABORATORY (1) LAB. 3. Coreq., MATL 7510 Laboratory on the use of electron microscopy for materials characterization.

MATL 7600/7606 BIOSENSORS: PRINCIPLES AND APPLICATIONS (3) LEC. 3. The fundamentals and applications of biological sensor. Physical and chemical transducers, biorecognition. Biosensor materials, technology, and fabrication. Departmental approval.

MATL 7610/7616 ENGINEERING ASPECTS OF BIOLOGICAL AND CHEMICAL DETECTION (3) LEC. 3. Biological and chemical scientific concepts related to biological and chemical threat agents. Existing and developing detection technologies, trends and needs for the future detection systems. Physical principles behind the detection technologies. Evaluation of detection device or system performance. Departmental approval.

MATL 7620/7626 NANO/MICRO FLUIDIC SYSTEMS (3) LEC. 3. Basic understanding of nano/microfluidics (typical volumes are nanoliters or picoliters) and practical applications in materials science and engineering, biotechnology, and other interdisciplinary fields of engineering and science. Departmental approval.

MATL 7630/7636 NANOMATERIALS FOR BIOTECHNOLOGY (3) LEC. 3. Basic understanding of nanobiotechnology and practical applications in the interdisciplinary fields of Materials Science and Engineering and biotechnology/medicine including nanostructured biomolecules and bioarrays as well as biomolecular nanoelectronics. Departmental approval.

MATL 7950 MATERIALS ENGINEERING SEMINAR (0) SEM. SU. Required during each semester of residency, but cannot be used toward minimum requirements for graduate degree in Materials Engineering. Content changes each semester and consists of off-campus speakers and presentations by graduate students and faculty.

MATL 7960/7966 DIRECTED READINGS IN MATERIALS ENGINEERING (1-6) IND. SU. May be taken more than one semester. Up to 6 hours may count toward the minimum degree requirements. Departmental approval. Course may be repeated with change in topics.

MATL 7970/7976 SPECIAL TOPICS IN MATERIALS ENGINEERING (1-3) LEC. Regular course addressing an advanced specialized area of Materials Engineering not covered by regularly offered courses. Departmental approval. Course may be repeated with change in topics.

MATL 7980/7986 MASTER MATERIALS ENGINEERING PROJECT (3) LEC. 3. SU. Special design project report directed by major faculty. Topics to be determined by the student's graduate committee.

MATL 7990 RESEARCH AND THESIS (1-15) MST. Course may be repeated with change in topics.

MATL 8990 RESEARCH AND DISSERTATION (1-15) DSR. Course may be repeated with change in topics.

Mathematics - MATH

Courses

MATH 1000/1003 COLLEGE ALGEBRA (3) LEC. 3. Fundamental concepts of algebra, equations and inequalities, functions and graphs, polynomial and rational functions. Does not satisfy the core requirement in mathematics. Students who have previous credit in any higher-numbered math course may not receive credit.

MATH 1100 FINITE MATH AND APPLICATIONS (3) LEC. 3. Pr., MPP score of 034 or MPA2 score of 034. Mathematics Core. Overview of finite mathematics and its applications. Graph theory, matrices, finite and conditional probability; descriptive and inferential statistics, voting methods, game theory.

MATH 1120/1123 PRE-CALCULUS ALGEBRA (3) LEC. 3. Pr., MPP score of 048 or MPA2 score of 048 or MATH 1000. Mathematics Core. Algebra of functions including polynomial, rational, exponential and logarithmic functions. Systems of equations and inequalities, quadratic inequalities, the binomial theorem. Students who have previous credit in any higher-numbered math course may not receive credit.

MATH 1130 PRE-CALCULUS TRIGONOMETRY (3) LEC. 3. Pr., MPP score of 056 or MPA2 score of 056 or MATH 1120. Mathematics Core. Preparatory course for the calculus sequence. Basic analytic and geometric properties of the trigonometric functions. Complex numbers, de Moivre's theorem, polar coordinates. Students who have previous credit in any higher-numbered math course may not receive credit.

MATH 1150 PRE-CALCULUS ALGEBRA AND TRIGONOMETRY (4) LEC. 4. Pr., MPP score of 064 or MPA2 score of 064. Mathematics Core. Algebraic functions, Exponential Logarithmic functions. Analytic and geometric properties of trigonometric functions. Students who have previous credit in any higher-numbered math course may not receive credit. Students are further required to have an appropriate score on the mathematics placement exam or to have passed MATH 1000 with a C or better.

MATH 1151 MATHEXCEL PRECALCULUS WORKSHOP (2) LEC. 2. SU. Coreq., MATH 1150. Appropriate score on the mathematics placement exam or grade of C or better in MATH 1000. Workshop for MATH 1150. Two 2-hour sessions per week. Fall, Spring.

MATH 1610 CALCULUS I (4) LEC. 4. Pr., (MPQ score of 100 and MPP score of 072) or (MPQ score of 100 and MPA2 score of 072) or MATH 1130 or MATH 1150. Mathematics Core. Limits, the derivative of algebraic, trigonometric, exponential, logarithmic functions. Applications of the derivative, antiderivatives, the definite integral and applications to area problems, the fundamental theorem of calculus. Students may receive credit for only one of MATH 1610, MATH 1617, or MATH 1710.

MATH 1611 MATHEXCEL CALCULUS WORKSHOP I (2) LEC. SU. Coreq., MATH 1610 Workshop for Math 1610. Two 2-hour sessions per week.

MATH 1617 HONORS CALCULUS I (4) LEC. 4. Pr., Honors College. MPQ minimum score of 100 and MPP minimum score of 072 or MPQ minimum score of 100 and MPA2 minimum score of 072 or MATH 1130 or MATH 1150. Mathematics Core. This course covers the same material as MATH 1610 but in a greater depth appropriate for honors students. Credit will not be given for both MATH 1617 and MATH 1680. Students may receive credit for only one of MATH 1610, MATH 1617, or MATH 1710.

MATH 1620 CALCULUS II (4) LEC. 4. Pr., MATH 1610 or MATH 1617 or MATH 1710. Techniques of integration, applications of the integral, parametric equations, polar coordinates. Vectors, lines and planes in space. Infinite sequences and series. Students may receive credit for only one of MATH 1620, MATH 1627, or MATH 1720.

MATH 1621 MATHEXCEL CALCULUS WORKSHOP II (2) LEC. 2. SU. Coreq., MATH 1620 Workshop for MATH 1620. Two 2-hour sessions per week.

MATH 1627 HONORS CALCULUS II (4) LEC. 4. Pr., Honors College. MATH 1617. The same material as MATH 1620, but in greater depth appropriate for honors students. Students may receive credit for only one of MATH 1620, MATH 1627 or MATH 1720.

MATH 1680 CALCULUS WITH BUSINESS APPLICATIONS I (4) LEC. 3, LEC. 2. Pr., MPP score of 072 or MPA2 score of 072 or MATH 1120 or MATH 1130 or MATH 1150 or appropriate score on Math Placement Exam. For students in the College of Business. Mathematics Core. Differentiation and integration of exponential and logarithmic functions and applications to business. Functions of several variables, partial derivatives, and multiple integrals.

MATH 1681 MATHEXCEL BUSINESS CALCULUS WORKSHOP I (2) LEC. 2. SU. Coreq., MATH 1680 Workshop for MATH 1680. Two 2-hour sessions per week.

MATH 1690 CALCULUS WITH BUSINESS APPS II (3) LEC. 3. Pr., MATH 1680 or MATH 1610 or MATH 1617, or Departmental approval. Probability, random variables, probability distributions. Further topics in calculus: integration, functions of several variables, applications to probability. Applications to business and related areas. Credit will not be given to majors in Engineering or Math or Physics.

MATH 1691 MATHEXCEL BUSINESS CALCULUS WORKSHOP II (2) LEC. 2. SU. Coreq., MATH 1690 Workshop for MATH 1690. Two 2-hours sessions per week.

MATH 1710 CALCULUS FOR ENGINEERING AND SCIENCE I (4) LEC. 4. Mathematics Core. Vector algebra, limits, derivatives and antiderivatives of real and vector valued functions and applications. The fundamental theorem of calculus. MATH 1710 and MATH 1720 include and re-order the material of MATH 1610 and MATH 1620, and MATH 1720 may be substituted for MATH 1620. MATH 1710 is not a sufficient prerequisite for MATH 1620. Credit will be given for only one of MATH 1610, MATH 1617, or MATH 1710. Credit will not be given for MATH 1680 and MATH 1710.

MATH 1720 CALCULUS FOR ENGINEERING AND SCIENCE II (4) LEC. 4. Pr., MATH 1710. Exponents and logarithms, separation of variables, L'Hopital's rule. Techniques of integration, work and energy, line integrals, the gradient and directional derivatives, the curl. Credit will be given for only one of MATH 1620, MATH 1627, or MATH 1720.

MATH 2630 CALCULUS III (4) LEC. 4. Pr., MATH 1620 or MATH 1627 or MATH 1720. Multivariate calculus: vector-valued functions, partial derivatives, multiple integration, vector calculus. Credit will be given for only one of MATH 2630, MATH 2637, or MATH 2730.

MATH 2637 HONORS CALCULUS III (4) LEC. 4. Pr., Honors College. MATH 1627. The same material as MATH 2630, but in greater depth appropriate for honors students. Credit will be given for only one of MATH 2630, MATH 2637, or MATH 2730.

MATH 2650 LINEAR DIFFERENTIAL EQUATIONS (3) LEC. 3. Pr., P/C, MATH 2630 or P/C, MATH 2637 or P/C, MATH 2730. First and second order linear differential equations including the solutions by infinite series, applications.

MATH 2660 TOPICS IN LINEAR ALGEBRA (3) LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720. Vector spaces, linear transformations, matrices, determinants, linear equations, bases and dimension, eigenvalues, inner product spaces, diagonalization of symmetric matrices.

MATH 2730 CALCULUS FOR ENGINEERING AND SCIENCE III (4) LEC. 4. Pr., MATH 1720. Optimization and Lagrange multipliers. Linear, spherical, cylindrical, polar transformations. The Jacobian. Surface integrals and integrals over solids. Divergence, Stokes' Theorem, Gauss' Theorem. Credit will only be given for one of MATH 2730, MATH 2630, or MATH 2637.

MATH 2790 MATHEMATICS OF INTEREST THEORY (3) LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720. Mathematical foundations of the theory of interest necessary as preparation for the Society of Actuaries examination on the theory of interest.

MATH 2850 MATHEMATICS FOR ELEMENTARY EDUCATION I (3) LEC. 3. Mathematical insights for elementary school teachers. Sets, the structure of the number system (integers, fraction, decimals). For Elementary Education majors or by departmental approval.

MATH 2860 MATHEMATICS FOR ELEMENTARY EDUCATION II (3) LEC. 3. Pr., MATH 2850. Mathematical insights for elementary school teachers. Probability, informal geometry, measurement. For Elementary Education majors or by departmental approval.

MATH 2870 MATHEMATICS FOR ELEMENTARY EDUCATION III (3) LEC. 3. A reexamination of the number system, geometry, probability, graph theory and discrete mathematics with emphasis on multiple problem solving techniques. Open for credit only for elementary education majors except by special permission of the mathematics department.

MATH 3010 HISTORY OF MATHEMATICS (3) LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720. The evolution of modern mathematics from its motivational roots in the physical sciences; the lives and contributions of outstanding mathematicians; the parallel development of mathematics and western culture. Departmental approval.

MATH 3100 INTRODUCTION TO ADVANCED MATHEMATICS (3) LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. Teaching of the fundamental abilities necessary for the pursuance of mathematical studies. Logic and set theory, mathematical induction, basic number theory, basic analysis. Credit will not be given for both MATH 3100 and Math 3710.

MATH 3710 DISCRETE MATHEMATICS (3) LEC. 3. Pr., MATH 2660. Methods of proof, induction, counting, inclusion-exclusion, discrete probability, relations, partial orders, graphs, trees, languages, grammars, finite state machines, automata. Credit will not be given for both MATH 3710 and Math 3100.

MATH 4790 ACTUARIAL SEMINAR IN THE MATHEMATICS OF FINANCE (3) LEC. 3. Pr., MATH 2790. Intensive seminar in the mathematical aspects of finance, and the theory of interest primarily intended as preparation for the Society of Actuaries Course 2 examination.

MATH 4820 ACTUARIAL SEMINAR IN PROBABILITY (3) LEC. 3. Pr., STAT 3600 or equivalent. Intensive seminar in calculus, probability, and risk theory primarily intended as preparation for the Society of Actuaries Course 1 examination.

MATH 4930 DIRECTED STUDIES (1-3) IND. Study of individual problems or topics of interest to students. Course may be repeated for a maximum of 3 credit hours.

MATH 4970 SPECIAL TOPICS (1-4) IND. An individual problems course. Each student will work under the direction of a staff member on a problem of mutual interest. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

MATH 4997 HONORS THESIS (1-6) IND. Pr., Honors College. Course may be repeated for a maximum of 6 credit hours. Membership in Honors College.

MATH 5000 MATH MODELING CONTINUOUS (3) LEC. 3. Pr., MATH 2650 and MATH 2660. Introduction to mathematical models and related techniques. Includes general principles involving continuous deterministic problems and a detailed, specific term project. : Programming ability.

MATH 5010 VECTOR CALCULUS (3) LEC. 3. Pr., (MATH 2630 or MATH 2637 or MATH 2730) and MATH 2660. Vector-valued functions, vector fields. Gradient, divergence, curl. Integral theorems: Green's Theorem, Stoke's Theorem, Gauss' Theorem. Tensors and differential forms. Applications. Departmental approval.

MATH 5030 COMPLEX VARIABLES WITH APPLICATIONS I (3) LEC. 3. Pr., MATH 2650. Complex functions and their elementary mapping properties; contour integration and residues; Laurent series; applications to real integrals. MATH 5030-5040 are appropriate for students of engineering or science.

MATH 5040 COMPLEX VARIABLES WITH APPLICATIONS II (3) LEC. 3. Pr., MATH 5030. Linear fractional transformations; conformal mappings; harmonic functions; applications to boundary value problems; analytic continuation; entire functions. MATH 5030-5040 are appropriate for students of engineering or science.

MATH 5050 MATRIX THEORY AND APPLICATIONS (3) LEC. 3. Pr., MATH 2660. Canonical forms, determinants, linear equations, eigenvalue problems.

MATH 5060 ELEMENTARY PARTIAL DIFFERENTIAL EQUATIONS (3) LEC. 3. Pr., MATH 2650. First and second order linear partial differential equations with emphasis on the method of eigenfunction expansions.

MATH 5120 INFORMATION THEORY (3) LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. Information and entropy, information rate optimization and channel capacity, variable-length codes, data compression (Kraft-McMillan inequality, Huffman's algorithm), maximum likelihood decoding, Shannon's Noisy Channel Theorem.

MATH 5130 CALCULUS OF VARIATION (3) LEC. 3. Pr., MATH 2650. Fundamental concepts of extrema of functions and functionals; first and second variations; generalizations; sufficient conditions; constrained functionals; the general Lagrange Problem; optimal control.

MATH 5140 DATA COMPRESSION (3) LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720. Lossless compression methods, including static, dynamic, and higher order Huffman and arithmetic encoding, interval and recency rank encoding, and dictionary methods; lossy transform methods (JPEG).

MATH 5150 ALGEBRAIC CODING THEORY (3) LEC. 3. Linear codes, Hamming and Golay codes, BCH codes, cyclic codes. Random error detection and correction. Burst-error correction. Decoding algorithms. Credit will not be given for both MATH 5150 and MATH 6150/6156.

MATH 5160 INTRODUCTION TO APPLIED MATHEMATICS (3) LEC. 3. Pr., MATH 2650 and MATH 2660. Fourier transforms, Z-transforms, Function spaces, eigenfunction methods. Conservation laws, diffusion, equilibrium states, wave phenomena, classical transform methods, energy integrals and conservation, maximum principles.

MATH 5180 CRYPTOGRAPHY (3) LEC. 3. Pr., MATH 2660. Classical cryptosystems, the Data Encryption Standard, one-way functions and relevant number theoretic problems (factoring, primality testing, discrete logarithm problem), RSA and other public key cryptosystems.

MATH 5190 INTRODUCTION TO APPROXIMATION THEORY (3) LEC. 3. Pr., MATH 2650. Approximation of functions by polynomials, spline functions or trigonometric functions, expansions in series.

MATH 5200 ANALYSIS I (3) LEC. 3. Pr., MATH 3100. Analogous course subject to departmental approval. The real number system, theorems concerning number sets, sequences, graphs of functions.

MATH 5210 ANALYSIS II (3) LEC. 3. Pr., MATH 5200. The real number system, theorems concerning number sets, sequences, graphs of functions; Riemann-Stieltjes integration, continuity, the derivative and functions of bounded variation; functions whose domains are in Euclidean spaces.

MATH 5240 FOURIER ANALYSIS (3) LEC. 3. Pr., MATH 2650. Convergence and oscillation theorems for Fourier Series. Gibbs phenomenon. Fourier transform. Fast Fourier transform.

MATH 5280 SYSTEMS OF DIFFERENTIAL EQUATIONS AND APPLICATIONS (3) LEC. 3. Pr., MATH 2650 and MATH 2660. Linear systems of differential equations, stability, phase portraits; non-linear systems, linearization, qualitative properties of orbits, Poincaré-Bendixson Theorem; numerical methods; applications.

MATH 5300 THEORY OF DIFFERENCE EQUATIONS (3) LEC. 3. Pr., MATH 2660. Linear difference equations, initial value problems, Green's functions, boundary value problems, systems, periodic solutions, nonlinear difference equations, models.

MATH 5310 INTRODUCTION TO ABSTRACT ALGEBRA I (3) LEC. 3. Pr., MATH 3100. Departmental approval. Groups, Groups of Permutations, isomorphisms and homomorphisms; Cyclic Groups, Quotient Groups, The Fundamental Homomorphism Theorem.

MATH 5320 INTRODUCTION TO ABSTRACT ALGEBRA II (3) LEC. 3. Pr., MATH 5310. Theory of rings and fields, Ideals and Homomorphisms, Quotient Rings, Rings of Polynomials, Extensions of Fields, Galois Theory.

MATH 5330 COMPUTATIONAL ALGEBRA (3) LEC. 3. Pr., MATH 5310. Introduction to computation in multivariate polynomial rings and finite fields. Topics include Groebner bases, Buchberger's Algorithm, kinematic/robotics problems, symbolic manipulation software.

MATH 5370 LINEAR ALGEBRA (3) LEC. 3. Pr., MATH 2660. Linear transformations, matrix algebra, finite-dimensional vector spaces.

MATH 5380 INTERMEDIATE EUCLIDEAN GEOMETRY I (3) LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. Fundamental concepts and theorems of Euclidean geometry, introduction to higher dimensions. Regular polygons and polyhedra, symmetry groups, convexity, geometric extremum problems. Geometric transformations and their invariants.

MATH 5390 INTERMEDIATE EUCLIDEAN GEOMETRY II (3) LEC. 3. Pr., MATH 5380. Planar graphs and Euler's theorem. The symmetry group of a set, homotheties and similitudes, path, arcs and length of curves, advanced theorems on the circle.

MATH 5470 DYNAMICAL SYSTEMS I (3) LEC. 3. Pr., MATH 2650. One dimensional dynamics. The logistic equation, bifurcation theory, chaos, hyperbolicity, symbolic dynamics, Sarkovskii's Theorem, maps of the circle, homoclinic points and the theory of kneading sequences.

MATH 5480 DYNAMICAL SYSTEMS II (3) LEC. 3. Pr., MATH 5470. Higher dimensional and complex dynamics. Lorenz map, Henon map, toral automorphisms, stable and unstable manifolds, strange attractors, quadratic maps of the complex plane, Julia sets, Mandelbrot set.

MATH 5500 INTRODUCTION TO TOPOLOGY (3) LEC. 3. Pr., MATH 3100. Metric spaces, topological spaces, continuity, compactness, connectedness, product and quotient spaces and local properties. Departmental approval.

MATH 5620 MATHEMATICAL COMPUTATION AND SCIENTIFIC VISUALIZATION (3) LEC. 3. Pr., MATH 2650 and a programming language, or departmental approval. An introduction to the computational modeling process, numerical programming tools for large-scale scientific computation, parallel and cluster computing, and to scientific visualization techniques.

MATH 5630 INTRODUCTION TO NUMERICAL ANALYSIS I (3) LEC. 3. Pr., MATH 2650. Programming ability. Numerical solution of equations, polynomial approximation, numerical differentiation and integration, numerical solutions of ordinary differential equations, error analysis. Written programs using algorithms. Programming ability.

MATH 5640 INTRODUCTION TO NUMERICAL ANALYSIS II (3) LEC. 3. Pr., MATH 2660. Programming ability. Numerical solutions of systems of linear equations, numerical computation of eigenvalues and eigenvectors, error analysis. Written programs using the algorithms.

MATH 5650 THEORY OF NONLINEAR OPTIMIZATION (3) LEC. 3. Pr., MATH 2650 and MATH 2660. Kuhn-Tucker conditions, quadratic programming, search methods and gradient methods, Lagrangean and penalty function methods.

MATH 5670 PROBABILITY AND STOCHASTIC PROCESSES I (3) LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. Random variables, discrete and absolutely continuous distributions. Poisson process, expectation and conditional expectation. Moment generating functions, limit distributions. Emphasis on probabilistic reasoning and problem solving. Credit will not be given for both MATH 5670 and STAT 5670.

MATH 5680 PROBABILITY AND STOCHASTIC PROCESSES II (3) LEC. 3. Pr., MATH 5670 or STAT 5670. Multivariate distributions. Central Limit Theorem, Laplace transforms, convolutions, simulation, renewal processes, Continuous-time Markov Chains, Markov renewal and semi-regenerative processes, Brownian motion and diffusion. Credit will not be given for both MATH 5680 and STAT 5680.

MATH 5690 INTRODUCTION TO CHAOTIC AND RANDOM PHENOMENA (3) LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720. Stochastic properties of random phenomena in computational complexity, data analysis, chaotic nonlinear systems. Computer simulation and experimenting within Mathematica, supported by Internet resources. Credit will not be given for both MATH 5690 and STAT 5690. Basic programming.

MATH 5710 LINEAR OPTIMIZATION (3) LEC. 3. Pr., MATH 2660. Theory and algorithms for standard linear optimization problems. Simplex algorithm and duality, shortest paths, network flows, min-cost flows and circulations, out-of-kilter method, assignments and matchings.

MATH 5730 ENUMERATION (3) LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. Using generating functions and Polya theory to do sophisticated counting. Permutations and combinations, inclusion-exclusion, partitions, recurrence relations, group actions, Polya theory with applications.

MATH 5750 GRAPH THEORY (3) LEC. 3. Pr., MATH 2660. Algorithmic and theoretical aspects of graph theory: matchings, colorings, scheduling problems, Hamilton cycles. Euler tours, spanning trees, network reliability, connectivity, extremal graphs, planar graphs, disjoint paths.

MATH 5770 COMBINATORIAL DESIGNS (3) LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720. Latin squares, mutually orthogonal latin squares, orthogonal and perpendicular arrays, Steiner triple systems, block designs, difference sets and finite geometries.

MATH 5800 ACTUARIAL MATHEMATICS I (3) LEC. 3. Pr., MATH 2790 and STAT 3600. A development of the mathematical theory of life insurance and annuities. Utility functions, mortality models, life tables, insurance plans, premiums.

MATH 5810 ACTUARIAL MATHEMATICS II (3) LEC. 3. Pr., MATH 5800. A development of the mathematical theory of life insurance and annuities. Utility functions, mortality models, life tables, insurance plans, premiums.

MATH 5840 FOUNDATIONS OF NUMBER THEORY FOR SECONDARY SCHOOL TEACHERS (3) LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. Divisibility, Diophantine equations, congruencies.

MATH 5850 NUMERICAL ANALYSIS FOR SECONDARY TEACHERS (3) LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. The numerical solutions of selected problems arising in calculus and algebra along with the programming techniques. Computer familiarity.

MATH 5860 FOUNDATIONS OF NON-EUCLIDEAN GEOMETRY FOR SECONDARY SCHOOL TEACHERS (3) LEC. 3. Pr., MATH 2630 or MATH 2637 or MATH 2730. B.L. geometry, hyperbolic geometry, absolute geometry, parallel postulates.

MATH 5870 FINANCIAL MATHEMATICS (3) LEC. 3. Pr., MATH 1610 and MATH 1620 and MATH 2650 and STAT 3600. Options and spreads, pricing of such options in accordance with the Black-Scholes Equation, and the binomial pricing model.

MATH 5970 SPECIAL TOPICS (1-3) IND. Topics may vary as needed. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

MATH 6000 MATHEMATICAL MODELING: CONTINUOUS (3) LEC. 3. Introduction to mathematical models and related techniques. Includes general principles involving continuous deterministic problems and a detailed, specific term-project. Programming ability.

MATH 6010 VECTOR CALCULUS (3) LEC. 3. Pr., (MATH 2630 or MATH 2637) and MATH 2660. Vector-valued functions, vector fields. Gradient, divergence, curl. Integral theorems: Green's Theorem, Stoke's Theorem, Gauss' Theorem. Tensors and differential forms. Applications. Departmental approval.

MATH 6030/6036 COMPLEX VARIABLES WITH APPLICATIONS I (3) LEC. 3. Complex functions and their elementary mapping properties; contour integration and residues; Laurent series; applications to real integrals. MATH 6030-6040 are appropriate for students of engineering or science.

MATH 6040 COMPLEX VARIABLES WITH APPLICATIONS II (3) LEC. 3. Pr., MATH 6030 or MATH 6036. Linear fractional transformations; conformal mappings; harmonic functions; applications to boundary value problems; analytic continuation; entire functions. MATH 6030-6040 are appropriate for students of engineering or science.

MATH 6050 MATRIX THEORY AND APPLICATIONS (3) LEC. 3. Canonical forms, determinants, linear equations, eigenvalue problems.

MATH 6060 ELEMENTARY PARTIAL DIFFERENTIAL EQUATIONS (3) LEC. 3. First and second order linear partial differential equations with emphasis on the method of eigenfunction expansions.

MATH 6120 INFORMATION THEORY (3) LEC. 3. Information and entropy, information rate optimization and channel capacity, variable-length codes, data compression (Kraft-McMillan inequality, Huffman's algorithm), maximum likelihood decoding, Shannon's Noisy Channel Theorem.

MATH 6130 CALCULUS OF VARIATION (3) LEC. 3. Pr., MATH 2650. Fundamental concepts of extrema functions and functionals; first and second generalizations; sufficient conditions; constrained functionals; the general Lagrange problem; optimal control.

MATH 6140 DATA COMPRESSION (3) LEC. 3. Lossless compression methods, including static, dynamic, and higher order Huffman and arithmetic encoding, interval and recency rank encoding, and dictionary methods; lossy transform methods (JPEG).

MATH 6150/6156 ALGEBRAIC CODING THEORY (3) LEC. 3. Linear codes, Hamming and Golay codes, BCH codes, cyclic codes. Random error detection and correction. Burst-error correction. Decoding algorithms. Credit will not be given for both MATH 6150 and MATH 6156/6156.

MATH 6160 INTRODUCTION TO APPLIED MATHEMATICS (3) LEC. 3. Fourier transforms, Z-transforms, Function spaces, eigenfunction methods. Conservation laws, diffusion, equilibrium states, wave phenomena, classical transform methods, energy integrals and conservation, maximum principles.

MATH 6180 CRYPTOGRAPHY (3) LEC. 3. Classical cryptosystems, the Data Encryption Standard, one-way functions and relevant number theoretic problems (factoring, primality testing, discrete logarithm problem), RSA and other public key cryptosystems.

MATH 6190 INTRODUCTION TO APPROXIMATION THEORY (3) LEC. 3. Pr., MATH 2650. Approximation of functions by polynomials, spline functions or trigonometric function, expansions in series.

MATH 6200 ANALYSIS I (3) LEC. 3. The real number system, theorems concerning number sets, sequences, graphs of functions.

MATH 6210 ANALYSIS II (3) LEC. 3. Pr., MATH 6200. The real number system, theorems concerning number sets, sequences, graphs of functions; Riemann-Stieltjes integrations, continuity, the derivative and functions of bounded variation; functions whose domains are in Euclidean spaces.

MATH 6240 FOURIER ANALYSIS (3) LEC. 3. Pr., MATH 6200. Convergence and oscillation theorems for Fourier Series. Gibbs phenomenon. Fourier transform. Fast Fourier transform.

MATH 6280 SYSTEMS OF DIFFERENTIAL EQUATIONS AND APPLICATIONS (3) LEC. 3. Linear systems of differential equations, stability, phase portraits; non-linear systems, linearization, qualitative properties of orbits, Poincare-Bendixson Theorem; numerical methods; applications.

MATH 6300 THEORY OF DIFFERENCE EQUATIONS (3) LEC. 3. Linear difference equations, initial value problems, Green's functions, boundary value problems, systems, periodic solutions, nonlinear difference equations, models.

MATH 6310 INTRODUCTION TO ABSTRACT ALGEBRA I (3) LEC. 3. Groups, Groups of Permutations, isomorphisms and homomorphisms; Cyclic Groups, Quotient Groups, The Fundamental Homomorphism Theorem. Departmental approval.

MATH 6320 INTRODUCTION TO ABSTRACT ALGEBRA II (3) LEC. 3. Pr., MATH 6310. Theory of rings and fields, Ideals and Homomorphisms, Quotient Rings, Rings of Polynomials, Extensions of Fields, and Galois Theory.

MATH 6330 COMPUTATIONAL ALGEBRA (3) LEC. 3. Pr., MATH 6310. Introduction to computation in multivariate polynomial rings and finite fields. Topics include Berlekamp's Algorithm, Groebner bases, Buchberger's Algorithm, kinematic/robotics problems, and symbolic manipulation software.

MATH 6370 LINEAR ALGEBRA (3) LEC. 3. Linear transformations, matrix algebra, finite-dimensional vector spaces.

MATH 6380 INTERMEDIATE EUCLIDEAN GEOMETRY I (3) LEC. 3. Fundamental concepts and theorems of Euclidean geometry, introduction to higher dimensions. Regular polygons and polyhedra, symmetry groups, convexity, geometric extremum problems. Geometric transformations and their invariants.

MATH 6390 INTERMEDIATE EUCLIDEAN GEOMETRY II (3) LEC. 3. Pr., MATH 6380. Planar graphs and Euler's theorem. The symmetry group of a set, homotheties and similitudes, path, arcs and length of curves, and advanced theorems on the circle.

MATH 6470 DYNAMICAL SYSTEMS I (3) LEC. 3. Pr., MATH 2650. One dimensional dynamics. The logistic equation, bifurcation theory, chaos, hyperbolicity, symbolic dynamics, Sarkovskii's Theorem, maps of the circle, homoclinic points and the theory of kneading sequences.

MATH 6480 DYNAMICAL SYSTEMS II (3) LEC. 3. Pr., MATH 6470. Higher dimensional and complex dynamics. Lorenz map, Henonmap, toral automorphisms, stable and unstable manifolds, strange attractors, quadratic maps of the complex plane, Julia sets, Mandelbrot set.

MATH 6500 INTRODUCTION TO TOPOLOGY (3) LEC. 3. Metric spaces, topological spaces, continuity, compactness, connectedness, product and quotient spaces and local properties. Departmental approval.

MATH 6620 MATHEMATICAL COMPUTATION AND SCIENTIFIC VISUALIZATION (3) LEC. 3. An introduction to the computational modeling process, numerical programming tools for large-scale scientific computation, parallel and cluster computing, and to scientific visualization techniques.

MATH 6630/6636 INTRODUCTION TO NUMERICAL ANALYSIS I (3) LEC. 3. Numerical solution of equations, polynomial approximation, numerical differentiation and integration, numerical solutions of ordinary differential equations, error analysis. Written programs using algorithms. Programming ability.

MATH 6640/6646 INTRODUCTION TO NUMERICAL ANALYSIS II (3) LEC. 3. Numerical solutions of systems of linear equations, numerical computation of eigenvalues and eigenvectors, error analysis. Written programs using the algorithms. Programming ability.

MATH 6650 THEORY OF NONLINEAR OPTIMIZATION (3) LEC. 3. Kuhn-Tucker conditions, quadratic programming, search methods and gradient methods, Lagrangean and penalty function methods.

MATH 6670/6676 PROBABILITY AND STOCHASTIC PROCESSES I (3) LEC. 3. Random variables, discrete and absolutely continuous distributions. Poisson process, expectation and conditional expectation. Moment generating functions, limit distributions. Emphasis on probabilistic reasoning and problem solving. Credit will not be given for both MATH 6670 and STAT 6670.

MATH 6680 PROBABILITY AND STOCHASTIC PROCESSES II (3) LEC. 3. Pr., MATH 6670 or STAT 6670. Multivariate distributions. Central Limit Theorem, Laplace transforms, convolutions, simulation, renewal processes, Continuous-time Markov Chains, Markov renewal and semi-regenerative processes, Brownian motion and diffusion. Credit will not be given for both MATH 6680 and STAT 6680.

MATH 6690 INTRODUCTION TO CHAOTIC AND RANDOM PHENOMENA (3) LEC. 3. Pr., MATH 1620. Stochastic properties of random phenomena in computational complexity, data analysis, chaotic nonlinear systems. Computer simulation and experimenting within Mathematica, supported by Internet resources. Credit will not be given for both MATH 6690 and STAT 6690.

MATH 6710 LINEAR OPTIMIZATION (3) LEC. 3. Theory and algorithms for standard linear optimization problems. Simplex algorithm and duality, shortest paths, network flows, min-cost flows and circulations, out-of-kilter method, assignments and matchings.

MATH 6730 ENUMERATION (3) LEC. 3. Using generating functions and Polya theory to do sophisticated counting. Permutations and combinations, inclusion-exclusion, partitions, recurrence relations, group actions, Polya theory with applications.

MATH 6750 GRAPH THEORY (3) LEC. 3. Algorithmic and theoretical aspects of graph theory: matchings, colorings, scheduling problems, Hamilton cycles. Euler tours, spanning trees, network reliability, connectivity, extremal graphs, planar graphs, disjoint paths.

MATH 6770 COMBINATORIAL DESIGNS (3) LEC. 3. Latin squares, mutually orthogonal latin squares, orthogonal and perpendicular arrays, Steiner triple systems, block designs, difference sets and finite geometries.

MATH 6800 ACTUARIAL MATHEMATICS I (3) LEC. 3. A development of the mathematical theory of life insurance and annuities. Utility functions, mortality models, life tables, insurance plans, premiums. Departmental approval.

MATH 6810 ACTUARIAL MATHEMATICS II (3) LEC. 3. Pr., MATH 6800. A development of the mathematical theory of life insurance and annuities. Utility functions, mortality models, life tables, insurance plans, premiums.

MATH 6840 FOUNDATIONS OF NUMBER THEORY FOR SECONDARY SCHOOL TEACHERS (3) LEC. 3. Divisibility, Diophantine equations, congruencies.

MATH 6850 NUMERICAL ANALYSIS FOR SECONDARY TEACHERS (3) LEC. 3. Pr., MATH 2630 or MATH 2637. The numerical solutions of selected problems arising in calculus and algebra along with the programming techniques. Computer familiarity.

MATH 6860 FOUNDATIONS OF NON-EUCLIDEAN GEOMETRY FOR SECONDARY SCHOOL TEACHERS (3) LEC. 3. Pr., MATH 2630 or MATH 2637. B.L. geometry, hyperbolic geometry, absolute geometry, parallel postulates.

MATH 6870 FINANCIAL MATHEMATICS (3) LEC. 3. Pr., MATH 1610 and MATH 1620 and MATH 2650 and STAT 3600. Options and spreads, pricing of such options in accordance with the Black-Scholes Equation, and the binomial pricing model.

MATH 6970/6976 SPECIAL TOPICS (1-3) IND. Topics may vary as needed. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

MATH 7000/7006 APPLIED MATHEMATICS I (3) LEC. 3. Linear spaces, matrices, eigenvalues, least squares solutions to linear systems, Hilbert spaces, orthogonal expansions, integral equations, compact operators, Green's functions for boundary value problems, eigenfunction expansions. Departmental approval.

MATH 7010/7016 APPLIED MATHEMATICS II (3) LEC. 3. Pr., MATH 7000. Calculus of variations, asymptotic expansions, Spectral theory, Fourier transform, Partial differential equations, transform methods and eigenfunction expansions, vibrations, diffusion processes, equilibrium states, Green's functions, boundary layer problems.

MATH 7040/7046 APPROXIMATION THEORY I (3) LEC. 3. Introduction and theory of some of the important methods of approximation. Includes uniform approximation, best approximation, best trigonometric approximation. Departmental approval.

MATH 7050/7056 APPROXIMATION THEORY II (3) LEC. 3. Pr., MATH 7040 or MATH 7046. Least square approximation and rational approximation, and advanced topics of current interest.

MATH 7070 INTERPOLATION I (3) LEC. 3. Techniques of approximation by interpolation, rates of convergence and methods of estimating error. Simultaneous approximation of functions and their derivatives; spline function interpolation; curve and surface fitting. Departmental approval.

MATH 7080 INTERPOLATION II (3) LEC. 3. Pr., MATH 7070. Timan's Theorem. Telyakovski and Gopengauz Theorems. Brudnyi's inequality, Polynomial based discrete cosine transforms, Piecewise polynomial interpolation, B-splines, Recurrence relations, Schoenberg-Whitney Theorem, Convergence properties of spline approximations.

MATH 7100 SPECIAL FUNCTIONS (3) LEC. 3. Special functions from classical complex analysis which play an important role in the mathematics of physics, chemistry, and engineering. Departmental approval.

MATH 7110 DISCRETE GEOMETRY AND CONVEXITY I (3) LEC. 3. Geometric objects and configurations with discrete symmetry groups. Regular polygons and polyhedra. Regular arrangements. Plane tilings and patterns. Departmental approval.

MATH 7120 DISCRETE GEOMETRY AND CONVEXITY II (3) LEC. 3. Pr., MATH 7110. Convexity and related geometric extremum problems. Packing and covering. Arrangements of extreme density.

MATH 7130 TENSOR ANALYSIS (3) LEC. 3. Manifolds, differential structure, vector and tensor fields, vector and tensor bundles, differential forms, chains. elements of differential geometry, advanced topics. Departmental approval.

MATH 7140 INTRODUCTION TO MODEL THEORY (3) LEC. 3. First-order languages, Satisfaction. Consequences. The completeness and compactness theorems, models constructed from constants. Elementary substructures and embeddings, Lowenheim-Skolem-Tarski theorems. Ultraproducts and ultrapowers. Departmental approval.

MATH 7150 AXIOMATIC SET THEORY I (3) LEC. 3. Introduction to modern set theory. The axioms of ZFC, ordinals and cardinals, closed unbounded sets, the constructible universe L , Martin's Axiom. Departmental approval.

MATH 7160 AXIOMATIC SET THEORY II (3) LEC. 3. Pr., MATH 7150. Introduction to forcing, independence results, iterated forcing, consistency of Martin's Axiom.

MATH 7170 ALGORITHMS DISCRETE OPTIMIZATION (3) LEC. 3. Pr., MATH 6750. Theory and practice of discrete algorithms: complexity class classes, reductions, approximate algorithms, greedy algorithms, search techniques, heuristics, randomized algorithms, and numeric algorithms.

MATH 7180 ALGORITHMIC ALGEBRA I (3) LEC. 3. Fundamental aspects of algorithmic algebra. Noetherian rings. Theory of Groebner bases. Hilbert Nullstellensatz. Elimination theory. Applications to graph theory and algebraic geometry. Departmental approval.

MATH 7190 ALGORITHMIC ALGEBRA II (3) LEC. 3. Pr., MATH 7180. Modules. Groebner bases for modules and syzygy computations. Improved Buchberger's algorithm. Computation of Ext. Groebner bases over rings. Primary decomposition of ideals. Dimension theory.

MATH 7200 REAL ANALYSIS I (3) LEC. 3. Sigma algebras, measures, measurable functions, integrability, properties of Lebesgue measure, density, Lusin's theorem, Egoroff's theorem, product measures, Fubini's theorem. Limit theorems involving pointwise convergence and integration. Departmental approval.

MATH 7210 REAL ANALYSIS II (3) LEC. 3. Pr., MATH 7200. L^p spaces, completeness, duals. Weak convergence, norm convergence, pointwise convergence, convergence in measure. Signed and complex measures. Absolute continuity, Lebesgue decomposition. Measure theory, Lebesgue integration, introductory functional analysis.

MATH 7230 FUNCTIONS OF A COMPLEX VARIABLE I (3) LEC. 3. Complex numbers, analytic functions, derivatives, Cauchy integral theorem and formulae, Taylor and Laurent series, analytic continuation, residues, maximum principles, Riemann surfaces. Departmental approval.

MATH 7240 FUNCTIONS OF A COMPLEX VARIABLE II (3) LEC. 3. Pr., MATH 7230. Conformal mappings, families of analytic functions and harmonic analysis.

MATH 7280 ADVANCED THEORY OF ORDINARY DIFFERENTIAL EQUATIONS I (3) LEC. 3. Existence and continuation theorems for ordinary differential equations, continuity and differentiability with respect to initial conditions, linear systems, differential inequalities, Sturm theory. Departmental approval.

MATH 7290 ADVANCED THEORY OF ORDINARY DIFFERENTIAL EQUATIONS II (3) LEC. 3. Pr., MATH 7280. Stability theory, periodic solutions, boundary value problems, disconjugacy of linear equations, Green's functions, upper and lower solutions, a priori bounds methods, current research.

MATH 7310 ALGEBRA I (3) LEC. 3. Groups, Lagrange's Theorem, normal subgroups, factor groups, Isomorphism and Correspondence Theorems. Symmetric groups, alternating groups, free groups, torsion groups. Introduction to rings, correspondence theorems. Departmental approval.

MATH 7320 ALGEBRA II (3) LEC. 3. Pr., MATH 7310. Rings, modules, vector spaces, and semi-simple modules. Commutative rings; prime and primary ideals, PIDs are UFD, factorizations in integral domains, field extensions, the Galois Correspondence Theorem.

MATH 7330 LINEAR REPRESENTATIONS OF FINITE GROUPS (3) LEC. 3. Pr., MATH 7320. Maschke's Theorem, characters, orthogonality relations, induced modules, Frobenius reciprocity, Clifford's Theorem, Mackey's Subgroup Theorem, Burnside's theorem on solvability.

MATH 7340 RING THEORY (3) LEC. 3. Pr., MATH 7320. Topics on: commutative rings (Cohen-Seidenberg theorems, Krull Intersection Theorem, Dedekind domains), or noncommutative rings (projective modules over Artinian algebras, representation type, Noether-Skolem Theorem, division algebras).

MATH 7350 ABELIAN GROUPS (3) LEC. 3. Pr., MATH 7320. Torsion groups: Decompositions, Ulm's theorem, uniqueness theorem for Abelian groups, Torsion-free groups: Completely decomposable groups, Butler groups, p -local groups, Warfield groups, splitting criteria. Homological topics.

MATH 7360 LIE ALGEBRA (3) LEC. 3. Pr., (MATH 5370 or MATH 6370) or (MATH 5320 or MATH 6320). General introduction of Lie algebras including their structures and classifications of semisimple Lie algebras.

MATH 7370 MATRICES I (3) LEC. 3. Jordan form, functions of a matrix, spectral theorem, singular values, norms, quadratic forms, field of values, inertia; topics of current interest. Departmental approval.

MATH 7380 MATRICES II (3) LEC. 3. Pr., MATH 7370. Matrix stability and inertia, inequalities for matrix eigenvalues and singular values, The Kronecker and Hadamard matrix products, the exponential and logarithm matrix map; topics of current interest.

MATH 7390 MULTILINEAR ALGEBRA (3) LEC. 3. Pr., MATH 5370 or MATH 6370. Multilinear algebra, symmetry class of tensors, induced operators, generalized matrix functions, and current research topics.

MATH 7400 FUNCTIONAL ANALYSIS I (3) LEC. 3. Pr., MATH 7210. Bounded linear transformations and functionals on Banach and Hilbert spaces, weak topologies, linear operators, adjoints, compact operators. Banach algebras, spectral theory, Gelfand transform. Departmental approval.

MATH 7410 FUNCTIONAL ANALYSIS II (3) LEC. 3. Pr., MATH 7400. C^* -algebras, Hermitian, self adjoint elements, functional calculus for commutative algebras. Normal operators on Hilbert space, spectral theorem, applications, symmetric and self-adjoint operators, normal operators, the spectral theorem.

MATH 7440 PARTIAL DIFFERENTIAL EQUATIONS I (3) LEC. 3. Second order linear elliptic and hyperbolic equations stressing non-linear and numerical problems, characteristics domains of dependence, energy integrals, finite difference schemes, Sobolev spaces, maximum principle. Departmental approval.

MATH 7450 PARTIAL DIFFERENTIAL EQUATIONS II (3) LEC. 3. Pr., MATH 7440. Parabolic and hyperbolic equations, stressing numerical problems, characteristics, domains of dependence, energy integrals, reaction-diffusion problems, Navier-Stokes equations, fixed-point and Galerkin methods.

MATH 7500 TOPOLOGY I (3) LEC. 3. Separation and countability axioms, covering properties, completeness, connectedness, metric spaces and metrizability, product and quotient spaces, function spaces. Departmental approval.

MATH 7510 TOPOLOGY II (3) LEC. 3. Pr., MATH 7500. Homotopy, elementary properties of retracts, fundamental groups, covering spaces, computations of fundamental groups.

MATH 7520 DIMENSION THEORY (3) LEC. 3. Pr., MATH 7500 or MATH 6500. Topological study of dimension in separable metric spaces. Topological invariance of dimension of Euclidean spaces. Dimension and measure. Departmental approval.

MATH 7530 CONTINUUM THEORY I (3) LEC. 3. Pr., MATH 7510. Topics such as inverse limits, decompositions, hyperspaces, special mappings, topological structures from the pathological (indecomposable continua), to the straightforward (Peano continua). Departmental approval.

MATH 7540 CONTINUUM THEORY II (3) LEC. 3. Pr., MATH 7530. Topics in continuum theory such as confluent mappings, epsilon mappings, chains, to-the-boundary theorems, relationship to inverse limits, advanced topics.

MATH 7550 SET THEORETIC TOPOLOGY I (3) LEC. 3. Pr., MATH 7510.Compactifications, covering properties, metrization theorems and generalized metrizable spaces, topological groups. Departmental approval.

MATH 7560 SET THEORETIC TOPOLOGY II (3) LEC. 3. Pr., MATH 7550.Topological Groups, Cardinal invariants, use of set-theoretic axioms such as Martin's Axiom, independence results, advanced topics.

MATH 7570 EUCLIDEAN TOPOLOGY I (3) LEC. 3. Pr., MATH 7510.An introduction to concepts basic in algebraic and geometric topology through the study of simple objects such as polyhedra, manifolds, retracts, and the Brouwer fixed point theorem.

MATH 7580 EUCLIDEAN TOPOLOGY II (3) LEC. 3. Pr., MATH 7570.Further study of basic geometric topology. Retracts, absolute neighborhood retracts, maps into spheres, invariance of domain.

MATH 7600/7606 ADVANCED NUMERICAL MATRIX ANALYSIS (3) LEC. 3. Topics selected from: discretization matrices, sparse matrices, QR-algorithm, symmetric eigenvalue problems, singular value decomposition, pseudo-inverses, simplex method, matrix algorithms for vector computers. Departmental approval.

MATH 7610/7616 NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS (3) LEC. 3. The numerical solution of partial differential equations using finite difference and finite element methods. Departmental approval.

MATH 7620 OPTIMIZATION THEORY (3) LEC. 3. Unconstrained problems: basic descent, conjugate gradient and quasi-Newton methods. Constrained problems: gradient projection, penalty, cutting plane and Lagrange methods. Credit will not be given for both MATH 7620 and INSY 8420. An ability to program in high- level language.

MATH 7650 HARMONIC ANALYSIS I (3) LEC. 3. Fourier series, Fourier transforms, maximal functions, singular integral theory, introduction to function spaces. Departmental approval.

MATH 7660 HARMONIC ANALYSIS II (3) LEC. 3. Pr., MATH 7650.Function spaces and interpolation, Calderon's reproducing formulas, wavelets, frames, connections to function spaces applications.

MATH 7680/7686 ADVANCED TOPICS IN NUMERICAL ANALYSIS (3) LEC. 3. Topics include: sparse systems of equations, parallel and vector algorithms, nonlinear and singular partial differential equations, calculation of eigenvalues and eigenvectors, pseudo-random numbers, filtering techniques. Departmental approval.

MATH 7710 COMPUTATIONAL GEOMETRY (3) LEC. 3. Design and time-complexity of computer algorithms for geometry problems studying the geometric ideas needed for computer-aided design, computer graphics and robotics. Departmental approval.

MATH 7720 INTRODUCTION TO CODING THEORY (3) LEC. 3. Introduction to methods and algorithms for reliable communications through error control coding. BCH, Reed- Solomon, Reed-muller codes, convolutional codes, Berlekamp-Massey, Viterbi, and iterated decoding algorithms.

MATH 7730 ADVANCED TOPICS IN CODING THEORY (3) LEC. 3. Pr., MATH 7720.Structure and theoretical properties of codes and related algorithms. Relations to other combinatorial and algebraic objects stressed. Departmental approval.

MATH 7740 ADVANCED COMBINATORIAL DESIGNS (3) LEC. 3. Topics of current interest and research in combinatorial design theory. Areas included: latin squares, embeddings, Wilson's constructions, quadruple systems, Hadamard designs, graph designs, orthogonal arrays.

MATH 7750 ADVANCED TOPICS IN GRAPH THEORY (3) LEC. 3. Pr., MATH 6750.Topics of current interest and recent research in graph theory. May include edge colorings, algebraic graph theory, network flows, factor theory.

MATH 7760 INTRODUCTION TO ALGEBRAIC TOPOLOGY I (3) LEC. 3. Pr., MATH 7510.Homology of chain complexes, the axioms of homology and their verification, computations of homology groups. Departmental approval.

MATH 7770 INTRODUCTION TO ALGEBRAIC TOPOLOGY II (3) LEC. 3. Pr., MATH 7760.Homology with coefficients and universal coefficient theorem theorems, Cohomology and universal coefficient theorems, homology of products of spaces, cup and cap products, duality in manifolds.

MATH 7780 ADVANCED ALGEBRAIC TOPOLOGY I (3) LEC. 3. Advanced topics in homology, cohomology, and duality with relations to and further study of homotopy theory Applications to and further study of manifolds and geometric topology. Departmental approval.

MATH 7790 ADVANCED ALGEBRAIC TOPOLOGY II (3) LEC. 3. Pr., MATH 7780. Continuation of MATH 7780; advanced topics in homology, cohomology, and duality with relations to and further study of homotopy theory. Applications to and further study of manifolds and geometric topology.

MATH 7800 PROBABILITY I (3) LEC. 3. Pr., a full year of undergraduate mathematical analysis at a level commensurate with MATH 5200/5210. Measure-theoretic foundations, independence, conditioning, martingales, Markov property, stationarity, random walks, Markov chains, Poisson processes.

MATH 7810/7816 PROBABILITY II (3) LEC. 3. Pr., MATH 7800. Classical and modern topics in stochastic processes (Markov chains, Poisson process, Brownian motion). Applications and stochastic models (queues, stationary processes, population dynamics, finances). Credit will not be given for both MATH 7810 and STAT 7810.

MATH 7820/7826 APPLIED STOCHASTIC PROCESSES I (3) LEC. 3. Classical and modern topics in stochastic processes (Markov processes, Random Walks, Martingales, Brownian motion). Introduction to stochastic integrals and differential equations. Applications (queues, population dynamics, chaos, finances). Credit will not be given for both MATH 7820 and STAT 7820.

MATH 7830 APPLIED STOCHASTIC PROCESSES II (3) LEC. 3. Classical and modern topics in stochastic processes (Markov processes, Random Walks, Martingales, Brownian motion). Introduction to stochastic integrals and differential equations. Applications (queues, population dynamics, chaos finances).

MATH 7870 REAL FUNCTIONS AND DESCRIPTIVE SET THEORY I (3) LEC. 3. Pr., MATH 7210 or MATH 7500. Borel classification of sets, the Baire classification of real functions. Derivatives and approximately continuous functions. The Lebesgue density topology.

MATH 7880 REAL FUNCTIONS AND DESCRIPTIVE SET THEORY II (3) LEC. 3. Pr., MATH 7870. Analytic and coanalytic sets. Lebesgue measurable, universally measurable and Marczewski measurable sets and functions. Baire properties. Singular sets. Category analogs to real analysis.

MATH 7950 SEMINAR (1-3) SEM. SU. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

MATH 7960 SPECIAL PROBLEMS (1-10) IND. Topics may vary as needed. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

MATH 7970 SPECIAL TOPICS (1-10) IND. Topics may vary as needed. Departmental approval. Course may be repeated with change in topics.

MATH 7980 RESEARCH AND SPECIAL PROJECT IN APPLIED MATHEMATICS (1-10) RES. SU. For students working on the Master of Applied Mathematics degree with concentration in numerical analysis. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

MATH 7990 RESEARCH AND THESIS (1-10) MST. Course may be repeated with change in topics.

MATH 8310 HOMOLOGICAL ALGEBRA I (3) LEC. 3. Pr., MATH 7320. Homology and cohomology. Hom and Tensor functors; the adjoint isomorphisms, injective/projective modules, flat modules, the classification of certain rings using homological tools. Departmental approval.

MATH 8320 HOMOLOGICAL ALGEBRA II (3) LEC. 3. Pr., MATH 8310. Localizations of modules, nonsingular rings and modules, the Goldie dimension, homological classification of modules; Whitehead modules, reflexive modules, R-modules as modules over their rings of endomorphisms.

MATH 8330 INTRODUCTION TO LIE GROUPS (3) LEC. 3. Pr., MATH 7310 or MATH 7370. Introduce Lie groups via matrix groups. Topics include exponential map, Lie algebras, classical groups, structures and classifications, manifolds, representations.

MATH 8400 ADVANCED FUNCTIONAL ANALYSIS I (3) LEC. 3. Pr., MATH 7210 and MATH 7400. Topics concerning bounded and unbounded linear operators in Banach and Hilbert spaces; theory of distributions and topological vector spaces with applications, current research.

MATH 8410 ADVANCED FUNCTIONAL ANALYSIS II (3) LEC. 3. Pr., MATH 8400. Topics from the theory of bounded and unbounded linear operators in Banach and Hilbert spaces; elements of nonlinear functional analysis, topics of current research interest.

MATH 8600 ADVANCED PROBABILITY I (3) LEC. 3. Processes, distributions, independence, Random sequences, series, averages, characteristic functions. Classical limit theorems, conditioning. Some experience with graduate level mathematics, preferably in the areas of analysis and topology.

MATH 8610 ADVANCED PROBABILITY II (3) LEC. 3. Pr., MATH 8600. Martingales, Markov chains, random walks, renewal theory, Poisson processes and ergodic theory.

MATH 8630 ADVANCED STOCHASTIC PROCESSES I (3) LEC. 3. Pr., MATH 8610. Gaussian processes, Brownian motion, invariance principles, convergence of random processes, measures and sets, stochastic integrals and quadratic variation.

MATH 8640 ADVANCED STOCHASTIC PROCESSES II (3) LEC. 3. Pr., MATH 8630. Continuous martingales and Brownian motion, stochastic differential equations and martingale problems, local time, excursions, one-dimensional SDE's and diffusions.

MATH 8700 FINITE GEOMETRY I (3) LEC. 3. Pr., MATH 5370. Projective and affine spaces over finite fields. Inversive planes. Relationship with linear algebra over finite fields and permutation groups. Applications to combinatorial designs.

MATH 8710 FINITE GEOMETRY II (3) LEC. 3. Pr., MATH 8700. Projective and affine spaces over finite fields. Inversive planes. Relationship with linear algebra over finite fields and permutation groups. Applications to combinatorial designs.

MATH 8960 SPECIAL PROBLEMS (1-10) IND. Topics may vary as needed. Departmental approval. Course may be repeated for a maximum of 15 credit hours.

MATH 8970 SPECIAL TOPICS (1-10) IND. Topics may vary as needed. Departmental approval. Course may be repeated for a maximum of 15 credit hours.

MATH 8990 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with change in topics.

Mechanical Engineering - MECH

Courses

MECH 2110 STATICS AND DYNAMICS (4) LEC. 3. LAB. 3. Pr., (MATH 1620 or MATH 1627) and (PHYS 1600 or PHYS 1607). Vectors, forces, moments and free body diagrams. Systems in mechanical equilibrium. Particles in motion.

MECH 2120 KINEMATICS AND DYNAMICS OF MACHINES (4) LEC. 3. LAB. 3. Pr., (MATH 2630 or MATH 2637) and MECH 2110. Kinematics and kinetics of rigid bodies. Kinematics and dynamics of mechanisms, cams and gears.

MECH 2220 COMPUTER-AIDED ENGINEERING (3) LEC. 2. LAB. 3. Pr., ENGR 1110 and COMP 1200 and P/C, MATH 2650. The computer as a tool in mechanical engineering.

MECH 2AA0 MECHANICAL ENGINEERING PROGRESS ASSESSMENT I (0) TST. SU. Progress Assessment Examination in: multivariate calculus, differential equations, chemistry, physics, statics, dynamics.

MECH 3020 THERMODYNAMICS II (3) LEC. 3. Pr., ENGR 2010. Gas and Vapor power cycles, Refrigeration cycles, Gas and gas-vapor mixtures, Chemical reactions, Chemical and phase equilibrium, Thermodynamic property relations.

MECH 3030 FLUID MECHANICS (3) LEC. 3. Pr., MECH 2110 and ENGR 2010 and MATH 2650 and P/C, MECH 3130. Fluid properties; fluid statics; mass conservation; momentum equation; external and internal flows; Euler and Bernoulli equations; dimensional analysis; viscous flows; boundary layers; compressible flow.

MECH 3040 HEAT TRANSFER (3) LEC. 3. Pr., MECH 3020 and MECH 3030. Fundamentals of heat transfer by conduction, convection, and radiation. Introduction to heat exchangers.

MECH 3050 MEASUREMENT AND INSTRUMENTATION (3) LEC. 2. LAB. 3. Pr., MECH 3030 and P/C, ELEC 3810 and P/C, MECH 3040. Theory and practice of modern sensors and computer-based data acquisition techniques, uncertainty analysis, results reporting, filtering and signal processing.

MECH 3130 MECHANICS OF MATERIALS (4) LEC. 3. LAB. 1. Pr., MECH 2110 and MATL 2100 and MATH 2650 and MATH 2660 and (MECH 2220 or MECH 3220). Stress and strain concepts, stress-strain relationships, applications, uniaxially loaded members, torsion, normal and shear stresses in beams, beam deflections, buckling, stress concentration, combined loading, failure theories, strain energy, impact loading, cyclic loading.

MECH 3140 SYSTEM DYNAMICS AND CONTROLS (3) LEC. 3. Pr., MECH 2120 and MATH 2650. System dynamics and automatic control theory.

MECH 3200 CONCEPTS IN DESIGN AND MANUFACTURING (2) LEC. 2. Pr., MECH 2110 and (P/C, MECH 2220 or P/C, MECH 3220).The mechanical design process, project based, with teamwork, project management and communication. Users' needs, engineering requirements, concept generation and selection, design development.

MECH 3210 DESIGN AND MANUFACTURING LAB (1) LAB. 1. Manufacturing safety lab for introduction to manufacturing processes associated with cutting, forming, and joining of metals and other materials.

MECH 3230 MACHINE DESIGN (3) LEC. 3. Pr., MECH 3130 and (MECH 3210 or MECH 2210) and (MECH 3200 or MECH 2210) and (MECH 2220 or MECH 3220).Design of systems containing a variety of mechanical elements.

MECH 3AA0 MECHANICAL ENGINEERING PROGRESS ASSESSMENT II (0) TST. SU. Pr., MECH 2AA0.Progress Assessment Examination in: Statistics, linear algebra, mechanical design, thermo-fluid design, social impact, contemporary issues.

MECH 4240 COMPREHENSIVE DESIGN I (2) LEC. 1. LAB. 3. Pr., (MECH 3AA0 and MECH 3230 and MECH 3040 and P/C, MECH 3050 and P/C, MECH 3140) or (MECH 3AA0 and MECH 3230 and P/C, MECH 3040 and MECH 3050 and P/C, MECH 3140) or (MECH 3AA0 and MECH 3230 and P/C, MECH 3040 and P/C, MECH 3050 and MECH 3140).Capstone engineering design course based on a design project similar to those encountered by the engineer in industry involving thermal and mechanical design.

MECH 4250 COMPREHENSIVE DESIGN II (2) LEC. 1. LAB. 3. Pr., (MECH 4240 and MECH 3040 and MECH 3050 and P/C, MECH 3140 and P/C, INSY 3600) or (MECH 4240 and MECH 3050 and MECH 3140 and P/C, MECH 3040 and P/C, INSY 3600) or (MECH 4240 and MECH 3140 and MECH 3040 and P/C, MECH 3050 and P/C, INSY 3600).Continuation of MECH 4240. Detailed design, fabrication, communication, and presentation of a prototype machine for an industrial sponsor.

MECH 4300 MECHANICAL EQUIPMENT ENGINEERING (3) LEC. 3. Pr., MECH 3020 and MECH 3030.Operation, performance, maintenance, selection, design and optimization of mechanical equipment commonly found in industrial operations.

MECH 4310 HEATING, VENTILATING, AIR CONDITIONING AND REFRIGERATION (3) LEC. 3. Pr., MECH 3040.Theory and practice of modern heating, ventilation, air conditioning and refrigeration systems; concepts, equipment, and systems design.

MECH 4320 APPLIED CFD AND HEAT TRANSFER (3) LEC. 3. Pr., MECH 3040 and MATH 2660.Introduction to computational fluid dynamics and heat transfer techniques used to analyze thermal performance of devices and systems. Commercial software will be used.

MECH 4420 VEHICLE DYNAMICS (3) LEC. 3. Pr., ENGR 2100 or ENGR 2350 or MECH 2120.Ground vehicle resistance, propulsion, maneuvering, and control tires, suspensions, braking, aerodynamics, case studies.

MECH 4430 GROUND VEHICLE FUNDAMENTALS (3) LEC. 3. Pr., ENGR 2100 or ENGR 2350 or MECH 2120.Engineering fundamentals of ground vehicles and typical subsystems, including: power (engine and electrical); drivetrain; braking; steering; suspension; ergonomics; and structure.

MECH 4440 AUTOMOTIVE DESIGN EXPERIENCE I (2) LEC. 1. LAB. 3. Pr., (MECH 4410 and MECH 4420) or (MECH 4410 and MECH 4430) or (MECH 4420 and MECH 4430).Team-based design of a ground vehicle, both whole-vehicle and subsystem; design evaluation and modification; oral and written communication. Departmental approval.

MECH 4450 AUTOMOTIVE DESIGN EXPERIENCE II (2) LEC. 1. LAB. 3. Pr., MECH 4440.Team-based fabrication, testing, modification and operation of a ground vehicle; oral and written communication; project management. Departmental approval.

MECH 4510 INDUSTRIAL AND ENVIRONMENTAL NOISE CONTROL (3) LEC. 3. Pr., MECH 2120 and MECH 3220.Sources of industrial and community noise, criteria for control, noise measuring instrumentation, issues involved in the design of machinery for minimum noise, noise ordinances and regulations.

MECH 4520 MACHINERY NOISE AND VIBRATION DIAGNOSTICS (3) LEC. 3. Pr., MECH 2120 and MECH 3220.An introduction to machinery diagnostics through noise and vibration signatures. Fundamental principles and applications of predictive maintenance of machinery.

MECH 4700 INTEGRATED ENGINEERING THEORY AND PRACTICE (3) LEC. 3. Pr., MECH 3200.Real world engineering management decision making, case studies from industry.

MECH 4930 DIRECTED STUDIES IN MECHANICAL ENGINEERING (1-3) IND/INT. Individual or small group study of a specialized area of Mechanical Engineering under faculty direction. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

MECH 4970 SPECIAL TOPICS IN MECHANICAL ENGINEERING (1-3) LEC. Regular course addressing a specialized area of Mechanical Engineering not covered by a regularly offered course. Topics may vary. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

MECH 4997 HONORS THESIS (1-6) IND. Pr., Honors College. Individual student directed research and writing of an honors thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

MECH 5010 COMPRESSIBLE FLUID FLOW (3) LEC. 3. Pr., MECH 3020 and MECH 3030. Properties of ideal gases; General one-dimensional wave motion; Isentropic flow with area change; Normal shock waves; Flow with friction (Fanno Flow) and heat transfer (Rayleigh Flow); Method of characteristics.

MECH 5110 INTERMEDIATE HEAT TRANSFER (3) LEC. 3. Pr., MECH 3040. Introduction to the analytical treatment of heat transfer by conduction, convection, and radiation. Suitable for those that require general coverage of advanced theory but whose primary research interest may lie elsewhere.

MECH 5120 COMBUSTION (3) LEC. 3. Pr., MECH 3040. Thermodynamics and chemical kinetics of combustion processes, premixed and diffusion flames, ignition, characterization and combustion of gaseous, liquid, and solid fuels, environmental aspects of combustion.

MECH 5210 ELECTRONICS THERMAL MANAGEMENT (3) LEC. 3. Pr., MECH 3040 and ELEC 3810. Thermal issues in electronics, review of heat transfer thermal resistance networks, design of finned heat sinks, numerical analysis of electronics cooling, advanced thermal management strategies.

MECH 5220 VIRTUAL PROTOTYPING (3) LEC. 3. Departmental approval. Computer simulation of mechanical systems integrating computer-aided design, dynamic simulation and finite element software; application to two-dimensional and three dimensional simple and complex mechanical systems.

MECH 5230 FRICTION, WEAR AND LUBRICATION (3) LEC. 3. Pr., MECH 3030 and MECH 3230 or INSY 3800. Theory and techniques for considering friction, wear and lubrication, in the design of machine components, and other surface interactions.

MECH 5240 BOUNDARY AND FULL-FILM LUBRICATION (3) LEC. 3. Pr., MECH 3030. Theory and techniques for design and modeling of the different regimes of lubrication between surfaces and machine components in order to control friction and wear.

MECH 5270 METALWORKING AND MANUFACTURING TRIBOLOGY (3) LEC. 3. Pr., MECH 3210. Theory and optimization techniques for tool life and surface finish considering friction, wear and lubrication in manufacturing processes including both metalworking fluids and hard/dry machining.

MECH 5300 ADVANCED MECHANICS OF MATERIALS (3) LEC. 3. Pr., MECH 3130. Stress and strain analysis, plane stress and plane strain concepts, generalized Hooke's law, stress function approach applications to 2-D problems, axisymmetric problems bending of curved members, torsion of prismatic members, stress concentration problems.

MECH 5310 MECHANICS OF ELECTRONIC PACK (3) LEC. 3. Pr., MECH 3130 and ELEC 3810. Stress and strain analysis of microelectronic packages and electronic assemblies using analytical, experimental and numerical methods.

MECH 5390 FUNDAMENTALS OF THE FINITE ELEMENT METHOD (3) LEC. 2. LAB. 3. Pr., MECH 3040 and MECH 3130 and MATH 2660. Introduction to the fundamentals of the finite element method.

MECH 5410 DYNAMICS OF ROTATING MACHINERY (3) LEC. 3. Pr., MECH 3140. Issues involved in the analysis and design of high-speed rotating machinery. Modeling, resonance, balancing, bearings, condition monitoring.

MECH 5420 DYNAMICS OF MULTIBODY SYSTEMS (3) LEC. 3. Pr., MECH 3140. Concepts in dynamics of multibody systems such as kinematics analysis, Newton Euler, Lagrange and Kane equations of motion, collisions, and vibrations of flexible links.

MECH 5430 BASICS SENSOR APPLICATIONS (3) LEC. 3. Pr., MECH 3130. Basic concepts, fabrication and operation of micromachined semiconductor, piezoelectric, piezoresistive, capacitive and fiber-optic sensors.

MECH 5450 NON-DESTRUCTIVE EVALUATION OF MATERIALS AND STRUCTURES (3) LEC. 3. Pr., MECH 3130. Non-destructive testing fundamentals. Ultrasonic, acoustic, vibration and eddy current techniques. Case studies.

MECH 5510 ENGINEERING ACOUSTICS (3) LEC. 3. Pr., MATH 2650. The fundamentals of acoustics. Vibration of strings, bars, plates. Acoustic plane waves, architectural acoustics and noise control will be emphasized.

MECH 5610 MECHANICAL VIBRATION (3) LEC. 3. Pr., MECH 2120 and MATH 2650 and MATH 2660. Modeling of lumped dynamic systems, free and forced vibration of single degree freedom systems, response to arbitrary excitation, analysis of two and multiple degrees of freedom systems.

MECH 5620 STABILITY AND VIBRATION OF DISCRETE SYSTEMS (3) LEC. 3. Pr., MECH 5610. Principles of advanced dynamics, linear systems with multiple degrees of freedom, stability and boundedness, free and forced response of linear systems, parameter identification.

MECH 5710 KINEMATICS AND DYNAMICS OF ROBOTS (3) LEC. 3. Pr., MECH 3140. Basic concepts in robotics such as kinematic analysis, coordinate transformation, Lagrange and Newton Euler equations of motion.

MECH 5720 CONTROL OF ROBOTIC MOTION (3) LEC. 3. Pr., MECH 3140. Application of various algorithms for robot manipulators.

MECH 5810 MECHATRONICS (3) LEC. 3. Pr., MECH 2120 and ELEC 3810. Introduction to the integration of mechanisms, sensors, controllers and actuators for machines, and design of automatic machinery.

MECH 5820 INTRODUCTION TO OPTIMAL SYSTEMS (3) LEC. 3. Introduction to the mathematical fundamentals of optimization. Application to multiple solution engineering problems in thermo-fluid and mechanical systems.

MECH 5830 ENGINES (3) LEC. 3. Pr., ENGR 2200.or (ENGR 2010 plus any one of (AERO 3110, CHEN 2610, CIVL 3110, MECH 3030)), Analysis, design, and application issues in internal combustion engines. Characteristics, thermodynamics, thermochemistry, unsteady multi-phase fluid dynamics, stresses, vibration, noise, mechanisms.

MECH 5970 INTERMEDIATE SPECIAL TOPICS IN MECHANICAL ENGINEERING (1-3) LEC. Regular course addressing an advanced specialized area of Mechanical Engineering not covered by a regularly offered course. Topics may vary. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

MECH 6010/6016 COMPRESSIBLE FLUID FLOW (3) LEC. 3. Properties of ideal gases; General one-dimensional wave motion; Isentropic flow with area change; Normal shock waves; Flow with friction (Fanno Flow) and heat transfer (Rayleigh Flow); Method of characteristics.

MECH 6110/6116 INTERMEDIATE HEAT TRANSFER (3) LEC. 3. Introduction to the analytical treatment of heat transfer by conduction, convection, and radiation. Suitable for those that require general coverage of advanced theory but whose primary research interest may lie elsewhere.

MECH 6120/6126 COMBUSTION (3) LEC. 3. Thermodynamics and chemical kinetics of combustion processes, premixed and diffusion flames, ignition, characterization and combustion of gaseous, liquid, and solid fuels, environmental aspects of combustion.

MECH 6210/6216 ELECTRONICS THERMAL MANAGEMENT (3) LEC. 3. Thermal issues in electronics, review of heat transfer thermal resistance networks, design of finned heat sinks, numerical analysis of electronics cooling, advanced thermal management strategies.

MECH 6220 VIRTUAL PROTOTYPING (3) LEC. 3. Departmental approval. Computer simulation of mechanical systems integrating computer-aided design, dynamic simulation and finite element software; application to two-dimensional and three dimensional simple and complex mechanical systems.

MECH 6230/6236 FRICTION, WEAR AND LUBRICATION (3) LEC. 3. Friction, wear, and lubrication in design of machine components and other surface interactions, with emphasis on optimizing tribological performance.

MECH 6240/6246 BOUNDARY AND FULL-FILM LUBRICATION (3) LEC. 3. Pr., MECH 3030. Theory and techniques for design and modeling of the different regimes of lubrication between surfaces and machine components in order to control friction and wear.

MECH 6270/6276 METALWORKING AND MANUFACTURING TRIBOLOGY (3) LEC. 3. Pr., MECH 3210. Theory and optimization techniques for tool life and surface finish considering friction, wear and lubrication in manufacturing processes including both metalworking fluids and hard/dry machining.

MECH 6300/6306 ADVANCED MECHANICS OF MATERIALS (3) LEC. 3. Stress and strain analysis, plane stress and plane strain concepts, generalized Hooke's law, stress function approach applications to 2-D problem, axisymmetric problems, bending of curved members, torsion of prismatic members, stress concentration problems.

MECH 6310/6316 MECHANICS OF ELECTRONIC PACKAGING (3) LEC. 3. Stress and strain analysis of Microelectronic packages and electronic assemblies using analytical, experimental and numerical methods.

MECH 6390/6396 FUNDAMENTALS OF THE FINITE ELEMENT METHOD (3) LEC. 2. LAB. 3. Introduction to the fundamentals of the finite element method.

MECH 6410/6416 DYNAMICS OF ROTATING MACHINERY (3) LEC. 3. Issues involved in the analysis and design of high-speed rotating machinery. Modeling, resonance, balancing, bearings, condition monitoring.

MECH 6420/6426 DYNAMICS OF MULTIBODY SYSTEMS (3) LEC. 3. Concepts in dynamics of multibody systems such as kinematics analysis, Newton Euler, Lagrange and Kane equations of motion, collisions, and vibrations of flexible links.

MECH 6430/6436 BASICS OF SENSOR APPLICATIONS (3) LEC. 3. Basic concepts, fabrication and operation of micro machined semiconductor, piezoelectric, piezoresistive, capacitive and fiber-optic sensors.

MECH 6450 NON-DESTRUCTIVE EVALUATION OF MATERIALS AND STRUCTURES (3) LEC. 3. Non-destructive testing fundamentals. Ultrasonic, acoustic, vibration, and eddy current techniques. Case studies.

MECH 6510/6516 ENGINEERING ACOUSTICS (3) LEC. 3. The fundamentals of acoustics. Vibration of strings, bars, plates. Acoustic plane waves, architectural acoustics, and, noise control will be emphasized.

MECH 6610/6616 MECHANICAL VIBRATION (3) LEC. 3. Modeling of lumped dynamic systems, free and forced vibration of single degree of freedom systems, response to arbitrary excitation, analysis of two and multiple degrees of freedom systems.

MECH 6620/6626 STABILITY AND VIBRATION OF DISCRETE SYSTEMS (3) LEC. 3. Pr., MECH 6610. Principles of advanced dynamics, linear systems with multiple degrees of freedom, stability and boundedness, free and forced response of linear systems, parameter identification.

MECH 6710/6716 KINEMATICS AND DYNAMICS OF ROBOTS (3) LEC. 3. Basic concepts in robotics such as kinematics analysis, coordinate, Lagrange and Newton Euler equations of motion.

MECH 6720/6726 CONTROL OF ROBOTIC MOTION (3) LEC. 3. Application of various algorithms for robot manipulators.

MECH 6810/6816 MECHATRONICS (3) LEC. 3. Introduction to the integration of mechanisms, sensors, controllers and actuators for machines and design of automatic machinery.

MECH 6820/6826 INTRODUCTION TO OPTIMAL SYSTEMS (3) LEC. 3. Introduction to the mathematical fundamentals of optimization. Application to multiple solution engineering problems in thermo-fluid and mechanical systems.

MECH 6830/6836 ENGINES (3) LEC. 3. Analysis, design, and application issues in internal combustion engines. Characteristics, thermodynamics thermochemistry, unsteady multi-phase fluid dynamics, stresses, vibration, noise, mechanisms.

MECH 6930/6936 INTERMEDIATE DIRECTED STUDIES IN MECHANICAL ENGINEERING (1-3) LEC. Individual or small group study of an advanced, specialized area of Mechanical Engineering under faculty direction. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

MECH 6970/6976 INTERMEDIATE SPECIAL TOPICS IN MECHANICAL ENGINEERING (1-3) LEC. Regular course addressing an advanced specialized area of Mechanical Engineering not covered by a regularly offered course. Topics may vary. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

MECH 7010/7016 ADVANCED THERMODYNAMICS (3) LEC. 3. Classical and statistical treatment of the laws and properties of thermodynamic systems; applications.

MECH 7110/7116 ADVANCED FLUID MECHANICS I (3) LEC. 3. Mass Conservation, Linear and Angular Momentum Equations; Energy Equation for Fluid Systems; Foundations of Inviscid Flows.

MECH 7120/7126 ADVANCED FLUID MECHANICS II (3) LEC. 3. Pr., MECH 7110 or MECH 7116. Schwarz-Christoffel Transformation; Hodograph Method; Three-Dimensional Potential Flows; Interface Waves; Low Reynolds Number Solutions; Oseen Approximation; Stability of Laminar Flows.

MECH 7130/7136 BOUNDARY LAYER THEORY (3) LEC. 3. Pr., MECH 7110 or MECH 7116. Mass Conservation; Momentum Equation; Energy Equation; Dimensional Analysis; Fully-Developed Laminar Flows; Similarity Solutions; Boundary layer Approximation; Stability of Laminar Flows.

MECH 7140/7146 TURBULENCE (3) LEC. 3. Pr., MECH 7130 or MECH 7136. Properties of Turbulence; Governing Conservation, Momentum and Energy Equations; Time-averaging, Vorticity Equation; Turbulence Models; Shear Flows; Jets, Wakes and Boundary Layers; Experimental Techniques.

MECH 7150/7156 FLUID MECHANICS OF PROCESSING (3) LEC. 3. Pr., MECH 7130 or MECH 7136. Properties of Fluids; Governing Equations; Dimensional analysis; Particle-Laden Flows; Applications to specific processing problems such as liquid metal flows, polymers, surface deposition.

MECH 7210/7216 DIFFUSIVE TRANSPORT (3) LEC. 3. Formulations and analytical solutions of steady, periodic, and unsteady heat and mass diffusion problems in one, two, and three dimensions.

MECH 7220/7226 CONVECTION HEAT TRANSFER (3) LEC. 3. Advanced topics in free and forced convection transport within the laminar, transitional and turbulent regimes; confined and external flows.

MECH 7230/7236 THERMAL RADIATION (3) LEC. 3. Fundamentals of thermal radiation heat transfer including: absorption, emission, and reflection from solids; absorption, emission, and scattering by gases; combined mode and conjugate heat transfer; exact and approximate solution methodologies.

MECH 7240/7246 NUMERICAL METHODS IN HEAT TRANSFER (3) LEC. 3. Advanced topics in finite element and finite difference methods; solution techniques, stability and convergence.

MECH 7250/7256 BOILING AND CONDENSATION (3) LEC. 3. Hydrodynamics of vapor-liquid flow, pool boiling, forced convective boiling, condensation, instabilities in two-phase systems, augmentation of boiling and condensation.

MECH 7300/7306 FRACTURE MECHANICS (3) LEC. 3. Stress and strain analysis of cracked bodies, energy release rate, Griffith problem, modes of fracture, crack tip fields, stress intensity factors, small scale crack tip yielding, the J-integral, HRR equations, experimental and numerical methods for fracture parameter estimation.

MECH 7310/7316 SOLID MECHANICS (3) LEC. 3. Stress and strain analysis in 3-D, constitutive behavior of elastic solids, orthotropy and isotropy, stress compatibility equations, Navier's equation, stress functions, applications.

MECH 7320/7326 CONTINUUM MECHANICS AND TENSOR ANALYSIS (3) LEC. 3. Pr., MECH 6300 or MECH 6306. Cartesian and curvilinear tensor analysis with applications to the mechanics of continuous media. Constitutive equations for solids and fluids.

MECH 7330/7336 EXPERIMENTAL MECHANICS (3) LEC. 3. Experimental methods for measurement of stress, strain and displacement. Strain gauges, transducers and brittle coatings. Transmission photoelasticity and photoelastic coatings. Introduction to moiré and coherent optical techniques.

MECH 7340/7346 INELASTIC STRESS ANALYSIS (3) LEC. 3. Pr., MECH 6300 or MECH 6306. Introduction to modeling material behavior of non-elastic materials. Theories of plasticity, linear and non-linear viscoelasticity, and viscoplasticity. Applications to modern engineering materials and simple structural members.

MECH 7360/7366 MECHANICS OF COMPOSITE MATERIALS (3) LEC. 3. Properties and mechanical behavior of fiber-reinforced composite materials. Anisotropic stress-strain relations, orthotropic elasticity and laminated plate theories, failure criteria, applications.

MECH 7370/7376 ANALYSIS OF PLATES AND SHELLS (3) LEC. 3. Theories for the bending and stretching of plate and shell structures. Transverse loading, buckling, vibration, and thermal stress problems. Introduction to energy methods, numerical techniques, and large deflection theories.

MECH 7390/7396 VARIATIONAL MECHANICS (3) LEC. 3. Energy methods in solid mechanics. Virtual work, stationary potential energy, and variational calculus. Elastic strain energy. Applications to bars, trusses, beams, frames, and plates. Castigliano's Theorem and the Ritz Method.

MECH 7410/7416 OPTICAL METHODS IN MECHANICS (3) LEC. 3. Measurement of stresses, strains, and deformations using optical methods; optical interference; Fourier optics; optical spatial filtering, white light methods; coherent optical methods.

MECH 7430/7436 OPTICAL PROPERTIES OF ADVANCED MATERIALS (3) LEC. 3. Pr., MECH 6430 or MECH 6436 or PHYS 7200. Linear and nonlinear optical properties, correlation with material-structure, electro-optic effects, lasers, frequency conversion, fiber-optics, technological applications.

MECH 7510/7516 ADVANCED ENGINEERING ACOUSTICS (3) LEC. 3. Pr., MECH 6510 or MECH 6516. The fundamentals of advanced acoustics theory. Wave equation derivation from Navier-Stokes equations, spherical waves, monopoles, dipoles, quadrupoles. Duct Acoustics, Statistical Energy Analysis.

MECH 7610/7616 ADVANCED DYNAMICS (3) LEC. 3. Dynamics of particles and systems of particles applied to engineering problems. Work-energy and impulse-momentum principles. Lagrange's equations and Hamilton's Principle.

MECH 7620/7626 NONLINEAR SYSTEMS (3) LEC. 3. Introduction, geometrical concepts, analytical methods, Poincare' maps, strange attractors, bifurcation, normal forms, center manifold theory, Liapunov stability, Liapunov exponents, linearization about periodic orbits, Floquet theory, bifurcation analysis.

MECH 7630/7636 MECHANICAL IMPACT (3) LEC. 3. Investigation of the fundamental concepts used to solve collision problems with friction. Departmental approval.

MECH 7640/7646 STABILITY AND VIBRATION OF CONTINUOUS SYSTEMS (3) LEC. 3. Pr., MECH 6610 or MECH 6616. Review of linear systems with multiple degrees of freedom, vibration of strings, beams, membranes and plates. Stability of columns, panels and plates. Galerkin and normal mode solutions, Liapunov methods for continuous systems.

MECH 7650/7656 RANDOM VIBRATION (3) LEC. 3. Pr., MECH 6610 or MECH 6616. Properties of random processes, review of linear systems with single and multiple degrees of freedom. Vibration of single and multiple degrees of freedom systems subjected to random excitations, design of structures subjected to random excitation. Parameter estimation.

MECH 7710/7716 CONTROL SYSTEMS ANALYSIS AND DESIGN (3) LEC. 3. Topics from control theory are introduced in the context of control systems analysis and design, including state variable feedback, modal control, optimal control and adaptive control for both continuous and discrete systems.

MECH 7930 ADVANCED DIRECTED STUDIES IN MECHANICAL ENGINEERING (1-3) IND. Individual or small group study of an advanced, specialized area of Mechanical Engineering under faculty direction. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

MECH 7950 GRADUATE SEMINAR (1) SEM. 1. SU. Topics may vary. Will not fulfill degree requirements. Course may be repeated with change in topics.

MECH 7970/7976 ADVANCED SPECIAL TOPICS IN MECHANICAL ENGINEERING (1-3) LEC. Regular course addressing an advanced specialized area of Mechanical Engineering not covered by regularly offered course. Topics may vary. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

MECH 7990 RESEARCH AND THESIS (1-12) MST. Individual Master's thesis research. May be repeated for credit. Course may be repeated with change in topics.

MECH 8990 RESEARCH AND DISSERTATION (1-12) DSR. Individual Doctoral dissertation research. May be repeated for credit. Course may be repeated with change in topics.

Middle School Educ - CTMD

Courses

CTMD 4010 TEACHING MATHEMATICS: MIDDLE SCHOOL (4) LEC. 2. LAB. 4. Admission to Teacher Education. Specific teaching strategies for a comprehensive middle school program grades 4-8.

CTMD 4190 CURRICULUM AND TEACHING IN THE MIDDLE SCHOOL (3) LEC. 2. LAB. 2. Admission to Teacher Education. To introduce and prepare undergraduate education students for the middle school student, middle school teaching, and middle level philosophy while incorporating reflective decision making.

CTMD 4900 DIRECTED STUDIES (1-6) IND. SU. Independent study directed at desired objectives. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTMD 4910 PRACTICUM IN MIDDLE SCHOOL EDUCATION (1-6) PRA. SU. Provides experience relating theory and practice, usually carried on simultaneously. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTMD 4920 INTERNSHIP (10) INT. 10. SU. Pr., P/C, CTSE 4200 or P/C, CTSE 4203. Supervised teaching in a public middle or secondary school, accompanied by scheduled discussions to analyze and evaluate the intern's experience. Admission to Internship.

CTMD 4970 SPECIAL TOPICS (1-4) LEC. Course may be repeated for a maximum of 4 credit hours.

CTMD 7900 DIRECTED STUDIES (1-6) IND. SU. Independent study directed toward desired objectives related to the respective areas of specialization. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTMD 7910 PRACTICUM IN AREA OF SPECIALIZATION (1-6) PRA. SU. Experience relating theory and practice, usually in a school setting. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTMD 7970 SPECIAL TOPICS (1-6) LEC. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

Military Science (AROTC) - MILS

Courses

MILS 1010 INTRODUCTION TO ARMY ROTC I (1) LEC. 1. Introduction to the Reserve Officer Training Corps and the US Army.

MILS 1011 INTRODUCTION TO ARMY ROTC I LABORATORY (1) LAB. 3. Introduction to the Reserve Officer Training Corps and the US Army.

MILS 1020 INTRODUCTION TO ARMY ROTC II (1) LEC. 1. Introduction to the Reserve Officer Training Corps and the U.S. Army.

MILS 1021 INTRODUCTION TO ARMY ROTC II LABORATORY (1) LAB. 3. Coreq., MILS 1020. Introduction to the Reserve Officer Training Corps and the U.S. Army.

MILS 2010 SELF TEAM DEVELOPMENT (1) LEC. 1. Learn and apply ethics-based leadership skills that develop individual attributes and contribute to effective team building.

MILS 2011 SELF/TEAM DEVELOPMENT LABORATORY (1) LAB. 2. Coreq., MILS 2010. Learn and apply ethics-based leadership skills that develop individual attributes and contribute to effective team building.

MILS 2020 INDIVIDUAL/TEAM MILITARY TACTICS (1) LEC. 1. Introduction to individual and team aspects of military training in small unit operations.

MILS 2021 INDIVIDUAL/TEAM MILITARY TACTICS LABORATORY (1) LAB. 2. Introduction to individual and team aspects of military training in small unit operations.

MILS 3010 LEADING SMALL ORGANIZATIONS I (2) LEC. 2. Coreq., MILS 3011. Introduction to squad level planning and operations. Admittance into the Advanced Course of Army ROTC.

MILS 3011 LEADING SMALL ORGANIZATIONS I LABORATORY (1) LAB. 4. Practical application of the foundational skills of small unit leadership. Admittance into Advanced Course Army ROTC.

MILS 3020 LEADING SMALL ORGANIZATIONS II (2) LEC. 2. Pr., MILS 3010 and MILS 3011. Coreq., MILS 3021. Introduction to platoon-level planning and operations and the U.S. Army Training Management System.

MILS 3021 LEADING SMALL ORGANIZATIONS II LABORATORY (1) LAB. 4. Pr., MILS 3010 and MILS 3011. Series of practical opportunities to lead small groups, receive performance assessments and coaching, and lead again in situations of increasing complexity.

MILS 3030 HISTORY OF THE UNITED STATES ARMY (3) LEC. 3. Survey of the history of the United States Army from the colonial era to present.

MILS 4010 LEADERSHIP CHALLENGES AND GOAL-SETTING (2) LEC. 2. Pr., MILS 3020 and MILS 3021. Plan, conduct and evaluate training and organizational cohesion.

MILS 4011 LEADERSHIP CHALLENGES AND GOAL-SETTING LABORATORY (1) LAB. 4. Pr., MILS 3020 and MILS 3021. Plan, conduct and evaluate training and activities of the ROTC cadet organization.

MILS 4020 TRANSITION TO LIEUTENANT I (2) LEC. 2. Pr., MILS 4010 and MILS 4011. Identify and resolve ethical dilemmas. Refine counseling and motivating techniques.

MILS 4021 TRANSITION TO LIEUTENANT I LABORATORY (1) LAB. 4. Pr., MILS 4010 and MILS 4011. Coreq., MILS 4020. Practical application of the principles taught in MILS 4020.

MILS 4040 THE ARMY PROFESSION (0) LEC. 1. SU. U.S. Army current trends and affairs. Army policies and programs. Completion of Army ROTC Advanced Course or Early Commissioning Program.

Music - Applied - MUAP

Courses

MUAP 1010 PERFORMANCE (0) PRL. Pr., departmental approval. Remedial performance instruction to be taken on a limited basis by Music Education majors and Music minors. May be repeated only upon departmental approval and unusual circumstances. One hour private lesson per week.

MUAP 1110 PERFORMANCE I (1) PRL. 1. Pr., departmental approval; successful audition. Instruction in major performance medium for the freshman Music Education major. One hour private lesson per week. Departmental approval; successful audition.

MUAP 1210 PERFORMANCE II (1) PRL. 1. Pr., MUAP 1110. Instruction in major performance medium for the freshman Music Education major. One hour private lesson per week. Departmental approval; successful audition.

MUAP 1310 PERFORMANCE I (1) PRL. 1. Instruction in major performance medium for the Music minor or secondary performance medium for the Music or Music Education major. One half-hour private lesson per week. Departmental approval and successful audition.

MUAP 1410 PERFORMANCE II (1) PRL. 1. Pr., MUAP 1310. Instruction in major performance medium for the Music minor or secondary performance medium for the Music or Music Education major. One half-hour private lesson per week. Departmental approval and successful audition.

MUAP 1520 PERFORMANCE I (2) PRL. 1. Instruction in major performance medium for the freshman BM or BA in Music major. One hour private lesson per week. Successful audition and departmental approval.

MUAP 1530 PERFORMANCE I (1) PRL. 1. Instruction in major performance medium for the first-year music theatre major. Two half-hour private lessons per week. Successful audition and departmental approval.

MUAP 1620 PERFORMANCE II (2) PRL. 1. Pr., MUAP 1520. Instruction in major performance medium for the freshman BM or BA in Music major. One hour private lesson per week. Successful audition and departmental approval.

MUAP 1630 PERFORMANCE II (1) PRL. 1. Pr., MUAP 1530. Instruction in major performance medium for the first-year music theatre major. Two half-hour private lessons per week. Successful audition and departmental approval.

MUAP 2110 PERFORMANCE III (1) PRL. 1. Pr., MUAP 1210. Instruction in major performance medium for the sophomore Music Education major. One hour private lesson per week. Departmental approval; successful audition.

MUAP 2210 PERFORMANCE IV (1) PRL. 1. Pr., MUAP 2110. Instruction in major performance medium for the sophomore Music Education major. One hour private lesson per week. Departmental approval; successful audition.

MUAP 2310 PERFORMANCE III (1) PRL. 1. Pr., MUAP 1410. Instruction in major performance medium for the Music minor or secondary performance medium for the Music or Music Education major. One half-hour private lesson per week. Departmental approval; successful audition.

MUAP 2410 PERFORMANCE IV (1) PRL. 1. Pr., MUAP 2310. Instruction in major performance medium for the Music minor or secondary performance medium for the Music or Music Education major. One half-hour private lesson per week. Departmental approval; successful audition.

MUAP 2520 PERFORMANCE III (2) PRL. 1. Pr., MUAP 1620. Instruction in major performance medium for the sophomore BM or BA in Music major. One hour private lesson per week. Successful audition and departmental approval.

MUAP 2530 PERFORMANCE III (1) PRL. 1. Pr., MUAP 1630. Instruction in major performance medium for the second-year music theatre major. Two half-hour private lessons per week. Successful audition and departmental approval.

MUAP 2620 PERFORMANCE IV (2) PRL. 1. Pr., MUAP 2520. Instruction in major performance medium for the sophomore BM or BA in Music major. One hour private lesson per week. Successful audition and departmental approval.

MUAP 2630 PERFORMANCE IV (1) PRL. 1. Pr., MUAP 2530. Instruction in major performance medium for the second-year music theatre major. Two half-hour private lessons per week. Successful audition and departmental approval.

MUAP 3120 PERFORMANCE V (1) PRL. 1. Pr., MUAP 2210. Instruction in major performance medium for the junior Music Education major. One hour private lesson per week. Departmental approval; successful audition.

MUAP 3220 PERFORMANCE VI (1) PRL. 1. Pr., MUAP 3120. Instruction in major performance medium for the junior Music Education major. One hour private lesson per week. Departmental approval; successful audition.

MUAP 3520 PERFORMANCE V (2) PRL. 1. Pr., MUAP 2620. Instruction in major performance medium for the junior BM or BA in Music major. One hour private lesson per week. Successful audition and departmental approval.

MUAP 3530 PERFORMANCE V (1) PRL. 1. Pr., MUAP 2630. Instruction in major performance medium for the third-year music theatre major. Two half-hour private lessons per week. Successful audition and departmental approval.

MUAP 3620 PERFORMANCE VI (2) PRL. 1. Pr., MUAP 3520. Instruction in major performance medium for the junior BM or BA in Music major. One hour private lesson per week. Successful audition and departmental approval.

MUAP 3630 PERFORMANCE VI (1) PRL. 1. Pr., MUAP 3530. Instruction in major performance medium for the third-year music theatre major. Two half-hour private lessons per week. Successful audition and departmental approval.

MUAP 4120 PERFORMANCE VII (1) PRL. 1. Pr., MUAP 3220. Instruction in major performance medium for the senior Music Education major. One hour private lesson per week. Departmental approval; successful audition.

MUAP 4220 PERFORMANCE VIII (1) PRL. 1. Pr., MUAP 4120. Instruction in major performance medium for the senior Music Education major. One hour private lesson per week. Departmental approval; successful audition.

MUAP 4520 PERFORMANCE VII (2) PRL. 1. Pr., MUAP 3620. Instruction in major performance medium for the senior BM or BA in Music major. One hour private lesson per week. Successful audition and departmental approval.

MUAP 4530 PERFORMANCE VII (1) PRL. 1. Pr., MUAP 3630. Departmental approval and successful audition. Instruction in major performance medium for the fourth-year music theatre major. Two half-hour private lessons per week.

MUAP 4620 PERFORMANCE VIII (2) PRL. 1. Pr., MUAP 4520. Instruction in major performance medium for the senior BM or BA in Music major. One hour private lesson per week. Successful audition and departmental approval.

MUAP 4630 PERFORMANCE III (1) PRL. 1. Pr., MUAP 4530. Departmental approval and successful audition. Instruction in major performance medium for the fourth-year music theatre major. Two half-hour private lessons per week.

MUAP 7120 PERFORMANCE (2) PRL. Departmental approval and successful audition. Private instruction in selected performance medium for the graduate Music Education major. One hour private lesson per week.

MUAP 7220 PERFORMANCE (2) PRL. Pr., MUAP 7120. Departmental approval and successful audition. Private instruction in selected performance medium for the graduate Music Education major. One hour private lesson per week. Departmental approval.

MUAP 7320 PERFORMANCE (2) PRL. Pr., MUAP 7220. Departmental approval and successful audition. Private instruction in selected performance medium for the graduate Music Education major. One hour private lesson per week.

MUAP 7420 PERFORMANCE (2) PRL. Pr., MUAP 7320. Departmental approval and successful audition. Private instruction in selected performance medium for the graduate Music Education major. One hour private lesson per week.

Music - MUSI

Courses

MUSI 1000 PERFORMANCE ATTENDANCE (0) LEC. 1. SU. Enrollment in MUAP. Required during each Semester of MUAP (Performance) enrollment. Monitored attendance at studio and departmental convocations, as well as approved concerts, lectures, and special presentations within the Music Department and community.

MUSI 1020 PIANO SKILLS I - RUDIMENTS (1) LEC. 2. Class instruction and practice in the rudiments of music performance as applied to the piano. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 1030 Piano Skills II, MUSI 2040 Functional Piano I, or MUSI 2050 Functional Piano II.

MUSI 1030 PIANO SKILLS II (1) LEC. 2. Pr., MUSI 1020., or departmental approval. Class instruction and practice in the rudiments of music performance as applied to the piano. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 2040 Functional Piano I or MUSI 2050 Functional Piano II.

MUSI 1050 SINGER'S DICTION (1) LEC. 2. Coreq., Registered for MUAP (Applied Voice) class. Introduction to the rules of singing English, Italian, German and French as applied to art songs and arias through use of the IPA.

MUSI 1090 THEATRE VOCAL SKILLS (1) LEC. 1. Successful audition. Class instruction and practice in the rudiments of music and vocal production for the Theatre Major.

MUSI 1310 MUSIC THEORY I (2) LEC. 2. Coreq., MUSI 1320A systematic study of music composition procedures, form, and style during the Period of Common Practice. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 1410 Music Theory II or MUSI 2310 Music Theory III.

MUSI 1320 MUSIC SKILLS I (1) LEC. 3. Coreq., MUSI 1310 Development of aural, keyboard and sight singing skills with an understanding of basic harmonic practices. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 1420 Music Skills II or MUSI 2320 Music Skills III.

MUSI 1410 MUSIC THEORY II (2) LEC. 2. Pr., MUSI 1310., or Departmental approval. A systematic study of music composition procedures, form, and style during the Period of Common Practice. For music majors and minors. Normally taken with Music Skills II. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 2310 Music Theory III.

MUSI 1420 MUSIC SKILLS II (1) LEC. 3. Pr., MUSI 1320., or Departmental approval. Development of aural, keyboard, and sight-singing skills with an understanding of basic harmonic practices. For music majors and minors. Normally taken concurrently with Music Theory II. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 2320 Music Skills III. Undergraduate level MUSI 1320 Minimum Grade of D for Music Education Majors. Undergraduate level MUSI 1320 Minimum Grade of C for BA in Music and BM Majors and Music Minors.

MUSI 2010 GUITAR AND STRINGS SKILLS (1) LEC. 2. Pr., MUSI 1310. Class instruction and practice in the rudiments of music performance of fretted and unfretted string instruments such as guitar, violin, viola, cello and string bass.

MUSI 2040 FUNCTIONAL PIANO I (1) LEC. 2. Pr., MUSI 1030., Or departmental approval. MUSI 2040 is not a prerequisite for 2050. Development of functional piano skills for use in classroom, rehearsal or studio. Credit for this course may be earned when a student passes a placement exam and achieves a grade of C or better in MUSI 2050 Functional Piano II. Undergraduate level MUSI 1030 Minimum Grade of D for Music Education Majors. Undergraduate level MUSI 1030 Minimum Grade of C for BA in Music and BM Majors and Music Minors.

MUSI 2050 FUNCTIONAL PIANO II (1) LEC. 2. Pr., MUSI 1030., Or departmental approval. MUSI 2040 is not a prerequisite for 2050. Development of functional piano skills for use in classroom, rehearsal or studio. Undergraduate level MUSI 1030 Minimum Grade of D for Music Education Majors. Undergraduate level MUSI 1030 Minimum Grade of C for BA in Music and BM Majors and Music Minors.

MUSI 2150 ADVANCED DICTION (1) LAB. 2. Pr., MUSI 1050. Coreq., enrolled in Applied Voice (MUAP). Advanced study of the rules of singing in Italian, Spanish, German and French through the use of the IPA. Undergraduate level MUSI 1050 Minimum Grade of D for Music Education Majors. Undergraduate level MUSI 1050 Minimum Grade of C for BA in Music and BM Majors and Music Minors.

MUSI 2310 MUSIC THEORY III (2) LEC. 2. Pr., MUSI 1410 and MUSI 1320., Or departmental approval. A systematic study of music composition procedures, form and style from the advent of chromaticism through the music of late 19th century. Undergraduate level MUSI 1410 Minimum Grade of D and Undergraduate level MUSI 1320 Minimum Grade of D for Music Education Majors. Undergraduate level MUSI 1410 Minimum Grade of C and Undergraduate level MUSI 1320 Minimum Grade of C for BA in Music and BM Majors.

MUSI 2320 MUSIC SKILLS III (1) LEC. 3. Pr., MUSI 1410 and MUSI 1420., Or departmental approval. Development of advanced aural, keyboard and sight-singing skills with understanding of advanced harmonic practices. Undergraduate level MUSI 1410 Minimum Grade of D and Undergraduate level MUSI 1420 Minimum Grade of D for Music Education Majors. Undergraduate level MUSI 1410 Minimum Grade of C and Undergraduate level MUSI 1420 Minimum Grade of C for BA in Music and BM Majors.

MUSI 2410 MUSIC THEORY IV (2) LEC. 2. Pr., MUSI 1420 and MUSI 2310., Or departmental approval. A systematic study of music composition procedures, form, and style from the late 19th century through the music of the 20th century. Undergraduate level MUSI 1420 Minimum Grade of D and Undergraduate level MUSI 2310 Minimum Grade of D for Music Education Majors. Undergraduate level MUSI 1420 Minimum Grade of C and Undergraduate level MUSI 2310 Minimum Grade of C for BA in Music and BM Majors.

MUSI 2420 MUSIC SKILLS IV (1) LEC. 3. Pr., MUSI 1410 and MUSI 2320., Or departmental approval. Development of advanced aural, keyboard, and sight-singing skills with the understanding of advanced harmonic practices.

MUSI 2730/2733 APPRECIATION OF MUSIC (3) LEC. 3. Fine Arts Core. An orientation in the art of listening. Outstanding composers and musical composition. No previous music training required.

MUSI 2737 HONORS APPRECIATION OF MUSIC (3) LEC. 3. Pr., Honors College.Fine Arts Core. The art and folk musics of western and non-western cultures. No previous music training required.

MUSI 3000 JUNIOR RECITAL (0) PRL. 0. SU. Pr., MUAP 2620 or MUAP 2630.Coreq., Registered in MUAP (Applied Lessons) class. Demonstration of a professional level of achievement in the student's major performance medium by the successful presentation of a junior recital.

MUSI 3030 VOCAL SKILLS (1) LEC. 1. Class instruction and practice in the rudiments of music as applied to vocal performance. Pr., Music Education major.

MUSI 3040 BRASS INSTRUMENT SKILLS (2) LAB. 2. Music Education major or departmental approval. Class instruction and practice in the techniques of playing and teaching brass musical instruments.

MUSI 3050 BRASS INSTRUMENT SKILLS - LOW BRASS (1) LEC. 2. Admission to Teacher Education or departmental approval. Class instruction and practice in rudiments of music as applied to trombone, tuba and other low-brass instruments.

MUSI 3060 WOODWIND INSTRUMENT SKILLS (2) LAB. 2. Music Education major or departmental approval. Class instruction and practice in the techniques of playing and teaching woodwind musical instruments.

MUSI 3070 WOODWIND INSTRUMENT SKILLS - FLUTE/CLARINET (1) LEC. 2. Admission to Teacher Education or departmental approval. Class instruction and practice in the rudiments of music as applied to flute and clarinet.

MUSI 3080 PERCUSSION SKILLS (1) LAB. 2. Pr., MUAP 1210.Class instruction and practice in the rudiments of music as applied to various percussion instruments.

MUSI 3090 STRING INSTRUMENT SKILLS (1) LAB. 2. Music Education major or departmental approval. Class instruction and practice in the techniques of playing and teaching upper and lower string musical instruments.

MUSI 3110 PIANO LITERATURE I (2) LEC. 2. Pr., MUAP 2520., or departmental approval. A study of the literature for solo piano from the Renaissance to the Classical era, with emphasis on musical styles.

MUSI 3120 PIANO LITERATURE II (2) LEC. 2. Pr., MUAP 2520., or departmental approval. A study of the literature for solo piano from the Romantic era to the present, with emphasis on musical styles.

MUSI 3130 VOCAL LITERATURE I (2) LEC. 2. Pr., MUAP 2520., or departmental approval. A survey of representative art song repertoire including techniques and application of song study, musicianship, interpretation, and performance practice.

MUSI 3140 VOCAL LITERATURE II (2) LEC. 2. Pr., MUAP 2520., or departmental approval. A study of the development of opera and oratorio literature from 1600 to the present time.

MUSI 3150 BRASS LITERATURE (2) LEC. 2. Pr., MUAP 2520., or departmental approval. An intensive study of the literature and materials for teaching and performing on brass instruments.

MUSI 3160 PERCUSSION LITERATURE (2) LEC. 2. Pr., MUAP 2520., or departmental approval. An intensive study of the literature and materials for teaching and performing on percussion instruments.

MUSI 3170 WOODWIND LITERATURE (2) LEC. 2. Pr., MUAP 2520., or departmental approval. An intensive study of the literature and materials for teaching and performing on woodwind instruments.

MUSI 3180 STRING LITERATURE (2) LEC. 2. Pr., MUAP 2520., or departmental approval. An intensive study of the literature and materials for teaching and performing on string instruments.

MUSI 3200 FORM AND ANALYSIS (3) LEC. 3. Pr., MUSI 2410. A study of the formal structure of music from 1700-1950 with an emphasis on standard forms and analytical techniques.

MUSI 3210 TONAL COUNTERPOINT (3) LEC. 3. Pr., MUSI 2410. A study of the standard practice of contrapuntal writing and analytical methods of contrapuntal music in the 18th century.

MUSI 3290 JAZZ THEORY AND IMPROVISATION (3) LEC. 3. Pr., MUSI 1410. A specialized course designed to address the major practical and theoretical areas informing jazz performance.

MUSI 3510 MUSIC HISTORY I (3) LEC. 3. Pr., MUSI 1410. A study of the development of music from the earliest times through early 18th Century styles through lectures, recorded examples and readings.

MUSI 3520 MUSIC HISTORY II (3) LEC. 3. Pr., MUSI 1410. A study of the development of music from the early 18th Century to the present day through lectures, recorded examples, and readings. Undergraduate level MUSI 1410 Minimum Grade of D for Music Education Majors. Undergraduate level MUSI 1410 Minimum Grade of C for BA in Music and BM Majors and Music Minors.

MUSI 3610 CHORAL CONDUCTING I (2) LEC. 2. Pr., MUSI 1410. Basic conducting technique and introduction to score reading and interpretation.

MUSI 3620 CHORAL CONDUCTING II (2) LEC. 2. Pr., MUSI 3610. Advanced conducting technique with practical experience in preparing choral groups for performance. Undergraduate level MUSI 3610 Minimum Grade of D for Music Education Majors. Undergraduate level MUSI 3610 Minimum Grade of C for BA in Music and BM Majors and Music Minors.

MUSI 3630 INSTRUMENTAL CONDUCTING I (2) LEC. 2. Pr., MUSI 1410. Basic conducting technique and introduction to score reading and interpretation.

MUSI 3640 INSTRUMENTAL CONDUCTING II (2) LEC. 2. Pr., MUSI 3630. Advanced conducting technique with practical experience in preparing instrumental groups for performance. Undergraduate level MUSI 3630 Minimum Grade of D for Music Education Majors. Undergraduate level MUSI 3630 Minimum Grade of C for BA in Music and BM Majors and Music Minors.

MUSI 3800 JUNIOR PERFORMANCE RECITAL (1) PRL. SU. Pr., MUAP 2620. Coreq., Registration in MUAP (Applied Lessons) class. Demonstration of a professional level of achievement in the student's major performance medium by the successful presentation of a junior recital.

MUSI 3970 SPECIAL TOPICS IN MUSIC (3) LEC. 3. Study of substantive topics and issues in the discipline of music. Course may be repeated for a maximum of 6 credit hours.

MUSI 4000 MUSIC EDUCATION SENIOR RECITAL PROJECT (1) PRL. SU. Pr., MUAP 3220 or MUAP 3620 or MUAP 3630. Pr., BME Major and MUAP 3120. Coreq., Registration in MUAP 3220. Demonstration of a professional level of achievement in the student's major performance medium by the successful presentation of a senior project.

MUSI 4010 VOCAL PEDAGOGY (2) LEC. 2. Pr., MUAP 2210 or MUAP 2620. For prospective voice teachers. An intensive study of the materials and methods of voice training.

MUSI 4020 INSTRUMENTAL PEDAGOGY (2) LEC. 2. Pr., MUAP 2210 or MUAP 2620. Admission to Teacher Education or BA major. For prospective instrumental teachers. An intensive study of the materials and methods of teaching various brass, woodwind and percussion instruments.

MUSI 4030 PIANO PEDAGOGY (2) LEC. 2. Piano majors and minors or departmental approval. A study of techniques, methods and experiences of former and current teachers to equip the student for future piano teaching.

MUSI 4040 MUSIC INSTRUMENTS REPAIR (1) LEC. 1. Selection, care and repair of woodwind, brass, and percussion instruments with emphasis on adjustments which should be made by the instrumental director.

MUSI 4090 MARCHING BAND TECHNIQUES (2) LEC. 2. Admission to Teacher Education or departmental approval. Fundamental methods and procedures of the marching band including study of computer-aided band charting.

MUSI 4100 ORCHESTRAL TECHNIQUES (2) LEC. 2. Fundamental methods and procedures of rehearsing the orchestra in areas of articulation, tone production, blend, balance, intonation, and musical expression.

MUSI 4110 CHORAL TECHNIQUES (2) LEC. 2. Methods and procedures of rehearsing choral groups in areas of diction, tone production, balance, blend, intonation, and musical expression.

MUSI 4200 MEDIEVAL AND RENAISSANCE MUSIC (3) LEC. 3. Pr., MUSI 2410 and MUSI 2420 and MUSI 3510 and MUSI 3520.A detailed study of the history of music during the Medieval and Renaissance periods.

MUSI 4210 BAROQUE MUSIC (3) LEC. 3. Pr., MUSI 2410 and MUSI 2420 and MUSI 3510 and MUSI 3520.A detailed study of the history of music during the period 1600-1750.

MUSI 4220 CLASSICAL MUSIC (3) LEC. 3. Pr., MUSI 2410 and MUSI 2420 and MUSI 3510 and MUSI 3520.A detailed study of the history of music during the period 1730-1800.

MUSI 4230 ROMANTIC MUSIC (3) LEC. 3. Pr., MUSI 2410 and MUSI 2420 and MUSI 3510 and MUSI 3520.A detailed study of the history of music during the period 1800-1900.

MUSI 4240 MODERN ERA (3) LEC. 3. Pr., MUSI 2410 and MUSI 2420 and MUSI 3510 and MUSI 3520.A detailed study of the history of music during the period 1900 to the present day.

MUSI 4280 AMERICAN POPULAR MUSIC (3) LEC. 3. Pr., MUSI 2410 and MUSI 2420.History, analysis and composition of American popular music styles from the late 19th century to the present.

MUSI 4290 FILM MUSIC (3) LEC. 3. Pr., MUSI 2410 and MUSI 2420.History and analysis of film music. Basic scoring techniques will be applied to short scoring projects.

MUSI 4400 INSTRUMENTAL ARRANGING (2) LEC. 2. Pr., MUSI 2410.Project course in arranging various instrumental combinations from quartet to symphonic band.

MUSI 4500 CHORAL ARRANGING (2) LEC. 2. Pr., MUSI 2410.Project course in arranging for various vocal combinations.

MUSI 4600 ORCHESTRATION (2) LEC. 2. Pr., MUSI 2410.Project course in arranging for various orchestral combinations.

MUSI 4700 BA SENIOR THESIS/PROJECT (3) LEC. 1. SU. Capstone course requiring a senior thesis or project which demonstrates synthesis of prior music coursework.

MUSI 4800 SENIOR PERFORMANCE RECITAL (2) PRL. SU. Pr., MUAP 3620.Coreq., Registration in MUAP (Applied Lessons) class. Demonstration of a professional level of achievement in the student's major performance medium by the successful presentation of a senior recital.

MUSI 4930 DIRECTED STUDY (1-3) IND. Independent study directed toward desired objectives related to student's specific areas of interest and specialization. Departmental approval. Course may be repeated with change in topics.

MUSI 5520 CHORAL LITERATURE (2) LEC. 2. Pr., Departmental approval. A chronological study of choral music from the Middle Ages to the present.

MUSI 5530 WIND BAND LITERATURE (2) LEC. 2. Pr., Departmental approval. History of the development of the wind band and its literature from ca. 1500 to the present.

MUSI 6520/6526 CHORAL LITERATURE (2) LEC. 2. Pr., Departmental approval. A chronological study of choral music from the Middle Ages to the present.

MUSI 7000/7006 GRADUATE CHORAL CONDUCTING I (3) LEC. 3. Registration in approved choral ensemble. Laboratory for the development of skills relating to conducting performances of traditional and modern choral works. Participation in an approved choral ensemble is required.

MUSI 7010/7016 GRADUATE CHORAL CONDUCTING II (3) LEC. 3. Pr., MUSI 7000 or MUSI 7006.Registration in approved choral ensemble. Laboratory for the development of skills relating to conducting performances of traditional and modern choral works.

MUSI 7040/7046 GRADUATE INSTRUMENTAL CONDUCTING I (3) LEC. 3. Registration in approved instrumental ensemble. Laboratory for the development of skills relating to conducting performances of traditional and modern instrumental works for large ensembles.

MUSI 7050/7056 GRADUATE INSTRUMENTAL CONDUCTING II (3) LEC. 3. Pr., MUSI 7040 or MUSI 7046. Registration in approved instrumental ensemble. Laboratory for the development of skills relating to conducting performances of traditional and modern instrumental works for large ensembles.

MUSI 7060/7066 BRASS INSTRUMENTS TECHNIQUES (1) LEC. 1. Registration in approved instrumental ensemble. Designed to work out specific problems with graduate students in furthering their knowledge of and skill on brass instruments.

MUSI 7070/7076 WOODWIND INSTRUMENTS TECHNIQUES (1) LEC. 1. Registration in approved instrumental ensemble. Designed to work out specific problems with graduate students in furthering their knowledge of and skill on woodwind instruments.

MUSI 7080/7086 PERCUSSION INSTRUMENTS TECHNIQUES (1) LEC. 1. Registration in approved instrumental ensemble. Designed to work out specific problems with graduate students in furthering their knowledge of and skill on various percussion instruments.

MUSI 7090/7096 SURVEY OF CHORAL LITERATURE (3) LEC. 3. Registration in approved choral ensemble. Detailed analysis of the styles, forms and performance practices of choral music of the Classic, Romantic, and Modern periods, working primarily with scores of representative works.

MUSI 7100/7106 CHORAL ARRANGING I (3) LEC. 3. Participation in an approved choral ensemble. Advanced arranging for various choral combinations.

MUSI 7110/7116 CHORAL ARRANGING II (3) LEC. 3. Pr., MUSI 7100 or MUSI 7106. Participation in an approved choral ensemble. Advanced arranging for various choral combinations.

MUSI 7120/7126 BAND ARRANGING I (3) LEC. 3. Participation in an approved band. Advanced arranging for various band organizations.

MUSI 7130/7136 BAND ARRANGING II (3) LEC. 3. Pr., MUSI 7120 or MUSI 7126. Participation in an approved band. Advanced arranging for various band organizations.

MUSI 7140 ORCHESTRAL ARRANGING I (3) LEC. 3. Participation in orchestra. Advanced arranging for the orchestra.

MUSI 7150 ORCHESTRAL ARRANGING II (3) LEC. 3. Pr., MUSI 7140. Participation in orchestra. Advanced arranging for the orchestra.

MUSI 7160 SEMINAR IN MUSIC HISTORY (2) SEM. 2. An in-depth study of different aspects of the history of music through historic research, analysis of music, and performance practice.

MUSI 7170 SEMINAR IN RENAISSANCE MUSIC (2) SEM. 2. Study of selected music of the Renaissance through history, analysis and performance practice.

MUSI 7180 SEMINAR IN BAROQUE MUSIC (2) SEM. 2. Study of selected Baroque music through history, analysis, and performance practice.

MUSI 7190 SEMINAR IN CLASSICAL MUSIC (2) SEM. 2. Study of selected Classical music through history, analysis, and performance practice.

MUSI 7200 SEMINAR IN ROMANTIC MUSIC (2) SEM. 2. Study of selected Romantic music through history, analysis, and performance practice.

MUSI 7210 SEMINAR 20TH-CENTURY MUSIC (2) SEM. 2. Study of selected 20th-Century music through history, analysis, and performance practice.

MUSI 7220 SEMINAR IN AMERICAN MUSIC (2) SEM. 2. Study of selected American music through history, analysis, and performance practice.

MUSI 7230/7236 ADVANCED FORMAL ANALYSIS (3) LEC. 3. Advanced formal analysis of standard music literature.

MUSI 7240/7246 WIND BAND LITERATURE I (3) LEC. 3. Enrollment in Graduate Instrumental Ensemble. History of the development of the wind band to 1950. Advanced analysis of Grade 1-3 wind band literature.

MUSI 7250/7256 WIND BAND LITERATURE II (3) LEC. 3. Coreq., Enrollment in Graduate Instrumental Ensemble. History of the development of the wind band from 1950 to present.

MUSI 7260 TECHNIQUES OF PRIVATE INSTRUMENTAL INSTRUCTION I (2) LEC. 2. Analysis of various instrumental teaching methods and a supervised private teaching experience.

MUSI 7270 TECHNIQUES OF PRIVATE INSTRUMENTAL INSTRUCTION II (2) LEC. 2. Pr., MUSI 7260. Analysis of various instrumental teaching methods and a supervised private teaching experience.

MUSI 7280 TECHNIQUES OF PRIVATE VOCAL INSTRUCTION I (2) LEC. 2. Analysis of various vocal teaching methods and a supervised private teaching experience.

MUSI 7290 TECHNIQUES OF PRIVATE VOCAL INSTRUCTION II (2) LEC. 2. Pr., MUSI 7280. Analysis of various vocal teaching methods and a supervised private teaching experience.

MUSI 7300 INTRODUCTION TO GRADUATE RESEARCH IN MUSIC (2) RES. 2. Extensive examination of research materials (books, music, and recordings). Includes the preparation of an outline for a research paper.

MUSI 7500 THEORY REVIEW I (1) LEC. 1. Pr., departmental approval. A study of and practical application of harmonic practices from before the Period of Common Practice to the present day with emphasis on various theoretical approaches and analytical techniques. Credit will not be given to graduate students.

MUSI 7510 THEORY REVIEW II (1) LEC. 1. Continuation of MUSI 7500. Credit will not be given to graduate students. Departmental approval.

MUSI 7540 VOCAL LITERATURE (2) LEC. 2. Pr., departmental approval. A study of the vocal literature from the Baroque to the present day.

MUSI 7550 KEYBOARD LITERATURE (2) LEC. 2. Pr., departmental approval. A study of keyboard repertoire from the Baroque to the present.

MUSI 7560 INSTRUMENTAL LITERATURE (2) LEC. 2. Pr., departmental approval. A study of the literature of the major performance instrument from its beginning to the present.

MUSI 7930/7936 DIRECTED STUDIES (1-6) IND. Pr., departmental approval. Independent study directed toward desired objectives related to student's specific areas of interest and specialization. Includes evaluation at regular interval. Course may be repeated with change in topic. Course may be repeated for a maximum of 12 credit hours.

MUSI 7970/7976 SPECIAL TOPICS IN MUSIC (1-6) LEC. Provides an opportunity for graduate students to pursue cooperatively selected topics. Course may be repeated for a maximum of 12 credit hours.

MUSI 7980 QUALIFYING RECITAL (3) LEC. 3. Pr., MUAP 7120. Public recital of graduate level repertoire. Recital may include a lecture component.

Music Education - CTMU

Courses

CTMU 1010 INTRODUCTION TO MUSIC EDUCATION (1) LAB. 3. Introduction to teaching music, including music education historical perspective, methods, and literature in the field. Clear background check required.

CTMU 1020 MUSIC EDUCATION LAB I (1) LAB. 3. Development and documentation of general music instructional abilities and dispositions for school and community music educators. Clear background check required.

CTMU 2010 MUSIC EDUCATION LAB LL (1) LAB. 3. Development and documentation of vocal or instrumental music instructional abilities and dispositions for school and community music educators. Clear background check required.

CTMU 3040 MUSIC AND RELATED ARTS (4) LEC. 2. LAB. 4. Interdisciplinary instruction appropriate for students' developmental characteristics which synthesize the content, professional resources, curriculum goals and instructional strategies of music.

CTMU 4900 DIRECTED STUDIES (1-6) IND. SU. Independent reading, research or other work focused on a content area of special interest. The student is directed by a faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTMU 4910/4913 PRACTICUM IN AREA OF SPECIALIZATION (1-6) PRA. Admission to Teacher Education. Cooperatively selected field experience. May count either CTMU 4910 or CTMU 4913. Course may be repeated for a maximum of 6 credit hours.

CTMU 4920 INTERNSHIP (12) AAB/INT. 12. SU. Admission to Teacher Education. Supervised on-the-job experience in a school, college or other appropriate setting, accompanied by regularly scheduled discussions with supervising faculty provide evaluation and analysis of the intern experience.

CTMU 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. Individual readings program. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CTMU 4970 SPECIAL TOPICS IN AREA OF SPECIALIZATION (1-6) LEC. Cooperatively selected concepts and theories pursued, normally in small groups. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTMU 4997 HONORS THESIS (1-3) IND. Pr., Honors College. The student's thesis is finalized in this course. Course may be repeated for a maximum of 3 credit hours.

CTMU 5110 CHILDREN'S MUSIC LEARNING (4) LEC. 3. LAB. 3. Admission to Teacher Education. Musical development and learning, birth-childhood. Curriculum, methods, and assessment for community and school children's music. Clear background check required. May count either CTMU 5110 or CTMU 6110.

CTMU 5120 SCHOOL AND COMMUNITY GENERAL MUSIC EDUCATION (4) LEC. 3. LAB. 3. Admission to Teacher Education. Musical development and learning, adolescence-adulthood. Curriculum, methods, and assessment for community and school general music. Clear background check required. May count either CTMU 5120 or CTMU 6120/CTMU 6126.

CTMU 5130 SCHOOL AND COMMUNITY INSTRUMENTAL MUSIC EDUCATION (4) LEC. 3. LAB. 3. Musical development and learning, instrumentalists. Curriculum, methods, and assessment for community and school instrumental music. Clear background check required. May count either CTMU 5130 or CTMU 6130.

CTMU 5140 SCHOOL AND COMMUNITY VOCAL MUSIC EDUCATION (4) LEC. 3. LAB. 3. Admission to Teacher Education. Musical development and learning of vocalists. Curriculum, methods, and assessment for community and school vocal music. Clear background check required. May count either CTMU 5140 or CTMU 6140.

CTMU 6110 CHILDREN'S MUSIC LEARNING (4) LEC. 3. LAB. 3. Musical development and learning, birth-childhood. Curriculum, methods, and assessment for community and school children's music. Clear background check required. May count either CTMU 5110 or CTMU 6110.

CTMU 6120/6126 SCHOOL AND COMMUNITY GENERAL MUSIC EDUCATION (4) LEC. 3. LAB. 3. Musical development and learning, adolescence-adulthood. Curriculum, methods, and assessment for community and school general music. Clear background check required. May count either CTMU 5120 or CTMU 6120/CTMU 6126.

CTMU 6130 SCHOOL AND COMMUNITY INSTRUMENTAL MUSIC EDUCATION (4) LEC. 3. LAB. 3. Musical development and learning, instrumentalists. Curriculum, methods, and assessment for community and school instrumental music. Clear background check required. May count either CTMU 5130 or CTMU 6130.

CTMU 6140 SCHOOL AND COMMUNITY VOCAL MUSIC EDUCATION (4) LEC. 3. LAB. 3. Musical development and learning of vocalists. Curriculum, methods, and assessment for community and school vocal music. Clear background check required. May count either CTMU 5140 or CTMU 6140.

CTMU 6940 ELEMENTARY/MIDDLE SCHOOL MUSIC METHODS (3) LEC. 3. Methodology, materials, organization and activities for elementary and middle school music programs. Includes professional field experiences in public school music programs. Admission to Alternative Master's Certification Program.

CTMU 6960 SECONDARY MUSIC METHODS (3) LEC. 3. Methodology, materials, organization and activities for secondary music programs. Includes professional field experiences in public school music programs. Admission to Alternative Master's Certification Program

CTMU 7000/7006 SCHOOL AND COMMUNITY MUSIC (1) LEC. 1. Developing skills, disposition, community, and research planning for graduate students in school and community music. May count either CTMU 7000 or CTMU 7006. Course may be repeated for a maximum of 2 credit hours.

CTMU 7510/7516 RESEARCH STUDIES IN MUSIC EDUCATION (3) RES. 3. Review, analysis and interpretation of available research with emphasis on designing new research to meet the changing needs of school musicians. May count either CTMU 7510 or CTMU 7516.

CTMU 7520/7526 CURRICULUM AND TEACHING IN MUSIC EDUCATION (3) LEC. 3. Teaching practices and evaluation of experiences and content for curriculum improvements. Students develop recommendations for music curriculum. May count either CTMU 7520 or CTMU 7526.

CTMU 7530/7536 ORGANIZATION OF PROGRAM IN MUSIC EDUCATION (3) LEC. 3. Program, organization and development of basic and supplementary materials for guiding teachers, facilities and school systems in continuous improvement of curriculum and teaching practices in music education. May count either CTMU 7530 or CTMU 7536.

CTMU 7540/7546 EVALUATION OF PROGRAM IN MUSIC EDUCATION (3) LEC. 3. Evaluation and investigation of teaching effectiveness including the utilization of human and material resources and the coordination of areas of specialization and issues in evaluation which are unique to music education settings. May count either CTMU 7540 or CTMU 7546.

CTMU 7550/7556 APPLICATIONS OF TECHNOLOGY IN MUSIC EDUCATION (3) LEC. 3. An overview of applications of current technology in music classroom, studios, and offices. May count either CTMU 7550 or CTMU 7556.

CTMU 7560/7566 DIGITAL MEDIA PRODUCTION FOR MUSIC EDUCATION (3) LEC. 3. Current tools, skills, and concepts for creating aural and visual interactive applications. May count either CTMU 7560 or CTMU 7566.

CTMU 7570 MUSIC INSTRUCTION MULTIMEDIA RESEARCH AND DEVELOPMENT (3) LEC. 3. Pr., CTMU 7550 or CTMU 7556. Current research music instructional technology, design of interactive applications. Departmental approval.

CTMU 7900/7906 DIRECTED STUDIES (1-6) IND. SU. Independent study directed toward desired objectives related to student's respective areas of specialization. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTMU 7910/7916 PRACTICUM IN AREA OF SPECIALIZATION (1-6) PRA. SU. Experience relating theory and practice, usually in a school setting. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTMU 7920/7926 INTERNSHIP (1-10) INT. SU. Supervised on-the-job experiences in a school, college or other appropriate setting, accompanied by regularly scheduled, on-campus discussion periods. Departmental approval. May count either CTMU 7920 or CTMU 7926. Course may be repeated for a maximum of 10 credit hours.

CTMU 7970/7976 SPECIAL TOPICS (1-9) LEC. Provides an opportunity for graduate students and professors to pursue cooperatively selected topics. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

CTMU 7990/7996 RESEARCH AND THESIS (1-10) MST. Course may be repeated with change in topics.

CTMU 8950/8956 SEMINAR (1-3) SEM. Selected concepts and theoretical formulations of common interest. Course may be repeated for a maximum of 12 credit hours.

CTMU 8980/8986 FIELD PROJECT (1-6) FLD. SU. Course may be repeated for a maximum of 6 credit hours.

CTMU 8990/8996 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with change in topics.

Music Ensemble - MUSE

Courses

MUSE 1100 MARCHING BAND (1) LAB. 6. Successful audition. Provides music for athletic contests and halftime shows at football games, parades, pep rallies and other campus and off-campus events. Course may be repeated for a maximum of 2 credit hours.

MUSE 1110 CONCERT BAND (1) LAB. 3. Successful audition. A large performance group which rehearses and performs the literature of the concert band. Open to all Auburn University students by audition only. Course may be repeated for a maximum of 2 credit hours.

MUSE 1120 SYMPHONIC BAND (1) LAB. 3. Successful audition. Large performance group which rehearses and performs the literature of the concert band. Open to Auburn University students by audition only. Course may be repeated for a maximum of 2 credit hours.

MUSE 1130 JAZZ BAND (1) LAB. 3. Successful audition. A performance group which rehearses and performs the jazz band literature. Open to Auburn University students by audition only. Course may be repeated for a maximum of 2 credit hours.

MUSE 1140 CAMPUS BAND (1) LAB. 3. A large concert band which gives performing experience to all university students with prior band experience. No audition is required. Course may be repeated for a maximum of 2 credit hours.

MUSE 1150 ORCHESTRA (1) LAB. 3. Successful audition. Orchestra ensemble, open to all university students based on the instrumental needs of the group and successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 1160 UNIVERSITY SINGERS (1) LAB. 3. Successful audition. Select choral ensemble for study and performance of madrigals, pop music, show tunes, and choral music of the jazz idiom. Course may be repeated for a maximum of 2 credit hours.

MUSE 1170 GOSPEL CHOIR (1) LAB. 3. Successful audition. Performance of choral works in the African-American gospel tradition. Open to all university students based on successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 1180 WOMEN'S CHORUS (1) LAB. 3. Successful audition. Performance of choral works for women. Open to all university students based on successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 1190 MEN'S CHORUS (1) LAB. 3. Successful audition. Performance of choral works for men. Open to all university students based on successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 1200 OPERA WORKSHOP (1) LAB. 3. Successful audition. Open to Auburn University students interested in opera performance, stage craft, make-up, conducting and coaching. Audition is required. Course may be repeated for a maximum of 2 credit hours.

MUSE 1210 CONCERT CHOIR (1) LAB. 3. Successful audition. Concert choir is a mixed chorus for study and performance of serious choral literature. Course may be repeated for a maximum of 2 credit hours.

MUSE 1220 MUSIC ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for small instrumental groups. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1230 VOCAL CHAMBER ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for small vocal groups. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1240 CHAMBER CHOIR (1) LAB. 3. Successful audition. Chamber Choir is a select mixed ensemble that rehearses and performs a variety of advanced choral literature. Course may be repeated for a maximum of 2 credit hours.

MUSE 1300 PERCUSSION ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for percussion ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1310 CONDUCTOR'S CHORUS (1) LAB. 3. Small laboratory chorus for choral conducting students. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1320 LOW BRASS ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for low brass ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1330 STEEL BAND (1) LAB. 3. Study and performance of musical compositions for steel band. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1340 WOODWIND ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for woodwind ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1350 WOODWIND QUINTET (1) LAB. 3. Study and performance of musical compositions for woodwind quintet. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1360 TRUMPET ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for trumpet ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1370 BASSOON ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for bassoon ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1380 SAXOPHONE ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for saxophone ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1390 HORN ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for horn ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1400 CLARINET ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for clarinet ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1410 FLUTE ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for flute ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1420 COLLABORATIVE PIANO (1) LAB. 3. Study and performance of musical compositions for voice or instrument with keyboard accompaniment. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1430 PIANO ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for piano ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1440 BRASS QUINTET (1) LAB. 3. Study and performance of musical compositions for brass quintet. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1450 BRASS ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for brass ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1460 PIANO CHAMBER MUSIC (1) LAB. 3. Study and performance of musical compositions for piano chamber music ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1470 STRING CHAMBER MUSIC (1) LAB. 3. Study and performance of musical compositions for string chamber music ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1480 JAZZ COMBO (1) LAB. 3. Study and performance of musical compositions for jazz combo. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1600 INDIAN MUSIC ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for Indian music ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1610 MARCHING PERCUSSION SECTIONALS (1) LAB. 3. Sectional rehearsals for Auburn University marching band drumline. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 1620 AUXILIARY SECTIONALS (1) LAB. 3. Successful audition. Sectional rehearsals for Tiger Eyes visual ensemble of the Auburn University marching band. Course may be repeated for a maximum of 2 credit hours.

MUSE 1630 PEP BAND (1) LAB. 3. Successful audition. Provides music for athletic contests including basketball games, pep rallies, and other campus and off-campus events. Course may be repeated for a maximum of 2 credit hours.

MUSE 2100 MARCHING BAND (1) LAB. 6. Successful audition. Provides music for athletic contests and halftime shows at football games, parades, pep rallies and other campus and off-campus events. Course may be repeated for a maximum of 2 credit hours.

MUSE 2110 CONCERT BAND (1) LAB. 3. Successful audition. A large performance group which rehearses and performs the literature of the concert band. Open to all Auburn University students by audition only. Course may be repeated for a maximum of 2 credit hours.

MUSE 2120 SYMPHONIC BAND (1) LAB. 3. Successful audition. Large performance group which rehearses and performs the literature of the concert band. Open to Auburn University students by audition only. Course may be repeated for a maximum of 2 credit hours.

MUSE 2130 JAZZ BAND (1) LAB. 3. Successful audition. A performance group which rehearses and performs the jazz band literature. Open to Auburn University students by audition only. Course may be repeated for a maximum of 2 credit hours.

MUSE 2140 CAMPUS BAND (1) LAB. 3. A large concert band which gives performing experience to all university students with prior band experience. No audition is required. Course may be repeated for a maximum of 2 credit hours.

MUSE 2150 ORCHESTRA (1) LAB. 3. Orchestra ensemble, open to all university students based on the instrumental needs of the group and successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 2160 UNIVERSITY SINGERS (1) LAB. 3. Successful audition. Select choral ensemble for study and performance of madrigals, pop music, show tunes, and choral music of the jazz idiom. Course may be repeated for a maximum of 2 credit hours.

MUSE 2170 GOSPEL CHOIR (1) LAB. 3. Successful audition. Performance of choral works in the African-American gospel tradition. Open to all university students based on successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 2180 WOMEN'S CHORUS (1) LAB. 3. Successful audition. Performance of choral works for women. Open to all university students based on successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 2190 MEN'S CHORUS (1) LAB. 3. Successful audition. Performance of choral works for men. Open to all university students based on successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 2200 OPERA WORKSHOP (1) LAB. 3. Successful audition. Open to Auburn University students interested in opera performance, stage craft, make-up, conducting and coaching. Audition is required. Course may be repeated for a maximum of 2 credit hours.

MUSE 2210 CONCERT CHOIR (1) LAB. 3. Successful audition. Concert choir is a mixed chorus for study and performance of serious choral literature. Course may be repeated for a maximum of 2 credit hours.

MUSE 2220 MUSIC ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for small instrumental groups. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2230 VOCAL CHAMBER ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for small vocal groups. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2240 CHAMBER CHOIR (1) LAB. 3. Successful audition. Chamber Choir is a select mixed ensemble that rehearses and performs a variety of advanced choral literature. Course may be repeated for a maximum of 2 credit hours.

MUSE 2300 PERCUSSION ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for percussion ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2310 CONDUCTOR'S CHORUS (1) LAB. 3. Small laboratory chorus for choral conducting students. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2320 LOW BRASS ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for low brass ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2330 STEEL BAND (1) LAB. 3. Study and performance of musical compositions for steel band. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2340 WOODWIND ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for woodwind ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2350 WOODWIND QUINTET (1) LAB. 3. Study and performance of musical compositions for woodwind quintet. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2360 TRUMPET ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for trumpet ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2370 BASSOON ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for bassoon ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2380 SAXOPHONE ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for saxophone ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2390 HORN ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for horn ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2400 CLARINET ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for clarinet ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2410 FLUTE ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for flute ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2420 COLLABORATIVE PIANO (1) LAB. 3. Study and performance of musical compositions for voice or instrument with keyboard accompaniment. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2430 PIANO ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for piano ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2440 BRASS QUINTET (1) LAB. 3. Study and performance of musical compositions for brass quintet. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2450 BRASS ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for brass ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2460 PIANO CHAMBER MUSIC (1) LAB. 3. Study and performance of musical compositions for piano chamber music ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2470 STRING CHAMBER MUSIC (1) LAB. 3. Study and performance of musical compositions for string chamber music ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2480 JAZZ COMBO (1) LAB. 3. Study and performance of musical compositions for jazz combo. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2600 INDIAN MUSIC ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for Indian music ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2610 MARCHING PERCUSSION SECTIONALS (1) LAB. 3. Sectional rehearsals for Auburn University marching band drumline. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 2620 AUXILIARY SECTIONALS (1) LAB. 3. Successful audition. Sectional rehearsals for Tiger Eyes visual ensemble of the Auburn University marching band. Course may be repeated for a maximum of 2 credit hours.

MUSE 2630 PEP BAND (1) LAB. 3. Successful audition. Provides music for athletic contests including basketball games, pep rallies, and other campus and off-campus events. Course may be repeated for a maximum of 2 credit hours.

MUSE 3100 MARCHING BAND (1) LAB. 6. Successful audition. Provides music for athletic contests and halftime shows at football games, parades, pep rallies and other campus and off-campus events. Course may be repeated for a maximum of 2 credit hours.

MUSE 3110 CONCERT BAND (1) LAB. 3. Successful audition. A large performance group which rehearses and performs the literature of the concert band. Open to all Auburn University students by audition only. Course may be repeated for a maximum of 2 credit hours.

MUSE 3120 SYMPHONIC BAND (1) LAB. 3. Successful audition. Large performance group which rehearses and performs the literature of the concert band. Open to Auburn University students by audition only. Course may be repeated for a maximum of 2 credit hours.

MUSE 3130 JAZZ BAND (1) LAB. 3. Successful audition. A performance group which rehearses and performs the jazz band literature. Open to Auburn University students by audition only. Course may be repeated for a maximum of 2 credit hours.

MUSE 3140 CAMPUS BAND (1) LAB. 3. A large concert band which gives performing experience to all university students with prior band experience. No audition is required. Course may be repeated for a maximum of 2 credit hours.

MUSE 3150 ORCHESTRA (1) LAB. 3. Successful audition. Orchestra ensemble, open to all university students based on the instrumental needs of the group and successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 3160 UNIVERSITY SINGERS (1) LAB. 3. Successful audition. Select choral ensemble for study and performance of madrigals, pop music, show tunes, and choral music of the jazz idiom. Course may be repeated for a maximum of 2 credit hours.

MUSE 3170 GOSPEL CHOIR (1) LAB. 3. Successful audition. Performance of choral works in the African-American gospel tradition. Open to all university students based on successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 3180 WOMEN'S CHORUS (1) LAB. 3. Successful audition. Performance of choral works for women. Open to all university students based on successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 3190 MEN'S CHORUS (1) LAB. 3. Successful audition. Performance of choral works for men. Open to all university students based on successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 3200 OPERA WORKSHOP (1) LAB. 3. Successful audition. Open to Auburn University students interested in opera performance, stage craft, make-up, conducting and coaching. Audition is required. Course may be repeated for a maximum of 2 credit hours.

MUSE 3210 CONCERT CHOIR (1) LAB. 3. Successful audition. Concert choir is a mixed chorus for study and performance of serious choral literature. Course may be repeated for a maximum of 2 credit hours.

MUSE 3220 MUSIC ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for small instrumental groups. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3230 VOCAL CHAMBER ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for small vocal groups. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3240 CHAMBER CHOIR (1) LAB. 3. Successful audition. Chamber Choir is a select mixed ensemble that rehearses and performs a variety of advanced choral literature. Course may be repeated for a maximum of 2 credit hours.

MUSE 3300 PERCUSSION ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for percussion ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3310 CONDUCTOR'S CHORUS (1) LAB. 3. Small laboratory chorus for choral conducting students. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3320 LOW BRASS ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for low brass ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3330 STEEL BAND (1) LAB. 3. Study and performance of musical compositions for steel band. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3340 WOODWIND ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for woodwind ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3350 WOODWIND QUINTET (1) LAB. 3. Study and performance of musical compositions for woodwind quintet. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3360 TRUMPET ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for trumpet ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3370 BASSOON ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for bassoon ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3380 SAXOPHONE ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for saxophone ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3390 HORN ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for horn ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3400 CLARINET ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for clarinet ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3410 FLUTE ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for flute ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3420 COLLABORATIVE PIANO (1) LAB. 3. Study and performance of musical compositions for voice or instrument with keyboard accompaniment. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3430 PIANO ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for piano ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3440 BRASS QUINTET (1) LAB. 3. Study and performance of musical compositions for brass quintet. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3450 BRASS ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for brass ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3460 PIANO CHAMBER MUSIC (1) LAB. 3. Study and performance of musical compositions for piano chamber music ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3470 STRING CHAMBER MUSIC (1) LAB. 3. Study and performance of musical compositions for string chamber music ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3480 JAZZ COMBO (1) LAB. 3. Study and performance of musical compositions for jazz combo. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3600 INDIAN MUSIC ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for Indian music ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3610 MARCHING PERCUSSION SECTIONALS (1) LAB. 3. Sectional rehearsals for Auburn University marching band drumline. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 3620 AUXILIARY SECTIONALS (1) LAB. 3. Successful audition. Sectional rehearsals for Tiger Eyes visual ensemble of the Auburn University marching band. Course may be repeated for a maximum of 2 credit hours.

MUSE 3630 PEP BAND (1) LAB. 3. Successful audition. Provides music for athletic contests including basketball games, pep rallies, and other campus and off-campus events. Course may be repeated for a maximum of 2 credit hours.

MUSE 4100 MARCHING BAND (1) LAB. 6. Successful audition. Provides music for athletic contests and halftime shows at football games, parades, pep rallies and other campus and off-campus events. Course may be repeated for a maximum of 2 credit hours.

MUSE 4110 CONCERT BAND (1) LAB. 3. Successful audition. A large performance group which rehearses and performs the literature of the concert band. Open to all Auburn University students by audition only. Course may be repeated for a maximum of 2 credit hours.

MUSE 4120 SYMPHONIC BAND (1) LAB. 3. Successful audition. Large performance group which rehearses and performs the literature of the concert band. Open to Auburn University students by audition only. Course may be repeated for a maximum of 2 credit hours.

MUSE 4130 JAZZ BAND (1) LAB. 3. Successful audition. A performance group which rehearses and performs the jazz band literature. Open to Auburn University students by audition only. Course may be repeated for a maximum of 2 credit hours.

MUSE 4140 CAMPUS BAND (1) LAB. 3. A large concert band which gives performing experience to all university students with prior band experience. No audition is required. Course may be repeated for a maximum of 2 credit hours.

MUSE 4150 ORCHESTRA (1) LAB. 3. Successful audition. Orchestra ensemble, open to all university students based on the instrumental needs of the group and successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 4160 UNIVERSITY SINGERS (1) LAB. 3. Successful audition. Select choral ensemble for study and performance of madrigals, pop music, show tunes, and choral music of the jazz idiom. Course may be repeated for a maximum of 2 credit hours.

MUSE 4170 GOSPEL CHOIR (1) LAB. 3. Successful audition. Performance of choral works in the African-American gospel tradition. Open to all university students based on successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 4180 WOMEN'S CHORUS (1) LAB. 3. Successful audition. Performance of choral works for women. Open to all university students based on successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 4190 MEN'S CHORUS (1) LAB. 3. Successful audition. Performance of choral works for men. Open to all university students based on successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 4200 OPERA WORKSHOP (1) LAB. 3. Successful audition. Open to Auburn University students interested in opera performance, stage craft, make-up, conducting and coaching. Audition is required. Course may be repeated for a maximum of 2 credit hours.

MUSE 4210 CONCERT CHOIR (1) LAB. 3. Successful audition. Concert choir is a mixed chorus for study and performance of serious choral literature. Course may be repeated for a maximum of 2 credit hours.

MUSE 4220 MUSIC ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for small instrumental groups. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4230 VOCAL CHAMBER ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for small vocal groups. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4240 CHAMBER CHOIR (1) LAB. 3. Successful audition. Chamber Choir is a select mixed ensemble that rehearses and performs a variety of advanced choral literature. Course may be repeated for a maximum of 2 credit hours.

MUSE 4300 PERCUSSION ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for percussion ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4310 CONDUCTOR'S CHORUS (1) LAB. 3. Small laboratory chorus for choral conducting students. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4320 LOW BRASS ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for low brass ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4330 STEEL BAND (1) LAB. 3. Study and performance of musical compositions for steel band. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4340 WOODWIND ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for woodwind ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4350 WOODWIND QUINTET (1) LAB. 3. Study and performance of musical compositions for woodwind quintet. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4360 TRUMPET ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for trumpet ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4370 BASSOON ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for bassoon ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4380 SAXOPHONE ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for saxophone ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4390 HORN ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for horn ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4400 CLARINET ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for clarinet ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4410 FLUTE ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for flute ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4420 COLLABORATIVE PIANO (1) LAB. 3. Study and performance of musical compositions for voice or instrument with keyboard accompaniment. Department approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4430 PIANO ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for piano ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4440 BRASS QUINTET (1) LAB. 3. Study and performance of musical compositions for brass quintet. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4450 BRASS ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for brass ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4460 PIANO CHAMBER MUSIC (1) LAB. 3. Study and performance of musical compositions for piano chamber music ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4470 STRING CHAMBER MUSIC (1) LAB. 3. Study and performance of musical compositions for string chamber music ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4480 JAZZ COMBO (1) LAB. 3. Study and performance of musical compositions for jazz combo. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4600 INDIAN MUSIC ENSEMBLE (1) LAB. 3. Study and performance of musical compositions for Indian music ensemble. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4610 MARCHING PERCUSSION SECTIONALS (1) LAB. 3. Sectional rehearsals for Auburn University marching band drumline. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

MUSE 4620 AUXILIARY SECTIONALS (1) LAB. 3. Successful audition. Sectional rehearsals for Tiger Eyes visual ensemble of the Auburn University marching band. Course may be repeated for a maximum of 2 credit hours.

MUSE 4630 PEP BAND (1) LAB. 3. Successful audition. Provides music for athletic contests including basketball games, pep rallies, and other campus and off-campus events. Course may be repeated for a maximum of 2 credit hours.

MUSE 7400/7406 GRADUATE CHORAL ENSEMBLE (1) LAB. 3. Successful audition. Graduate-level choral ensemble for the study and performance of standard literature. Course may be repeated for a maximum of 2 credit hours.

MUSE 7410/7416 GRADUATE INSTRUMENTAL ENSEMBLE (1) LAB. 3. Successful audition. Graduate-level instrumental ensemble for the study and performance of standard literature. Course may be repeated for a maximum of 2 credit hours.

MUSE 7500/7506 GRADUATE CHORAL ENSEMBLE (1) LAB. 3. Graduate-level choral ensemble for the study and performance of standard literature. Successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 7510/7516 GRADUATE INSTRUMENTAL ENSEMBLE (1) LAB. 3. Graduate-level instrumental ensemble for the study and performance of standard literature. Successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 7600/7606 GRADUATE CHORAL ENSEMBLE (1) LAB. 3. Graduate-level choral ensemble for the study and performance of standard literature. Successful audition. Course may be repeated for a maximum of 2 credit hours.

MUSE 7610/7616 GRADUATE INSTRUMENTAL ENSEMBLE (1) LAB. 3. Graduate-level instrumental ensemble for the study and performance of standard literature. Successful audition. Course may be repeated for a maximum of 2 credit hours.

Naval Science (NROTC) - NAVS

Courses

NAVS 1010 INTRODUCTION TO NAVAL SCIENCE (3) LEC. 3. Basic areas of Naval Science including uniforms and insignia, military courtesy, discipline, warfare components, organizational structure, and supporting elements of the U.S. Navy and U.S. Marine Corps.

NAVS 1011 NAVAL SCIENCE LABORATORY (0) LAB. 3. SU. Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military instruction.

NAVS 1020 SEAPOWERS AND MARITIME AFFAIRS (3) LEC. 3. Coreq., NAVS 1021 Introduction to broad principles, concepts and elements of naval history, seapower, and maritime affairs from past to present.

NAVS 1021 NAVAL SCIENCE LABORATORY (0) LAB. 3. SU. Coreq., NAVS 1020 Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

NAVS 2010 LEADERSHIP AND MANAGEMENT (3) LEC. 3. Fundamentals of leadership and management theory vital to the effectiveness of Navy/Marine Corps officers.

NAVS 2011 NAVAL SCIENCE LABORATORY (0) LAB. 3. SU. Coreq., NAVS 2010 Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

NAVS 2021 NAVAL SCIENCE LABORATORY (0) LAB. 3. SU. Coreq., NAVS 2060 Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

NAVS 2060 NAVIGATION (3) LEC. 3. Coreq., NAVS 2021 Theory and principles of piloting involving the use of visual and electronic aids.

NAVS 3011 NAVAL SCIENCE LABORATORY (0) LAB. 3. SU. Coreq., NAVS 3050 Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

NAVS 3021 NAVAL SCIENCE LABORATORY (0) LAB. 3. SU. Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

NAVS 3030 EVOLUTION OF WARFARE (3) LEC. 3. Pr., P/C, NAVS 3011 or P/C, NAVS 3021. Forms of warfare practices to identify historical continuity and change in the evolution of warfare. Explores the impact of historical precedent, economic factors and technological change on politico-military thought and action.

NAVS 3050 NAVAL SHIP SYSTEMS I (ENGINEERING) (3) LEC. 3. Coreq., NAVS 3011 Principles of ship design, construction, and stability. Introduction to thermodynamics and the steam cycle as applied to naval propulsion systems.

NAVS 3060 NAVAL SHIP SYSTEMS II WEAPONS (3) LEC. 3. Coreq., NAVS 3021 Theory and employment of systems through a study of fundamental principles of sensor, tracking, computational, and weapons delivery subsystems.

NAVS 4011 NAVAL SCIENCE LABORATORY (0) LAB. 3. SU. Coreq., NAVS 4050 Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

NAVS 4020 LEADERSHIP AND ETHICS (3) LEC. 3. Pr., NAVS 2010. Integrates an intellectual exploration of Western moral traditions and ethical philosophy with a variety of topics, such as military leadership, core values, and professional ethics. Departmental approval.

NAVS 4021 NAVAL SCIENCE LABORATORY (0) LAB. 3. SU. Coreq., NAVS 4020 Required for commission in Navy/Marine Corps. Includes naval drill, physical fitness and general military leadership instruction.

NAVS 4030 AMPHIBIOUS WARFARE (3) LEC. 3. Pr., P/C, NAVS 4011 or P/C, NAVS 4021. Historical survey of the development of amphibious doctrine and the conduct of amphibious operations. Emphasis on the evolution of amphibious warfare in the 20th century.

NAVS 4050 NAVAL OPERATION AND SEAMANSHIP (3) LEC. 3. Coreq., NAVS 4011 Inland and International law governing maritime operations, communication procedures, and other naval/maritime operational procedures.

Nursing - NURS

Courses

NURS 2017 HONORS INTRO TO NURSING (2) LEC. 2. Pr., Honors College. Study of professional nursing's role as the foundation of the health care system.

NURS 2020 PROFESSIONAL NURSING: THE FOUNDATION OF HEALTH CARE (2) LEC. 2. Admission to the School of Nursing. Fundamental concepts essential for professional nursing practice.

NURS 3110 THEORETICAL CONCEPTS OF PROFESSIONAL NURSING PRACTICE (3) LEC. 3. Pr., NURS 2020. Coreq., NURS 3141 and NURS 3130 Exploration of essential professional nursing concepts.

NURS 3130 EVIDENCE BASED SKILLS, ASSESSMENT, AND HEALTH PROMOTION (4) LEC. 4. Pr., NURS 2020. Coreq., NURS 3110 and NURS 3141 Integration of current evidence to guide nursing skills, assessment, and health promotion.

NURS 3141 CONCEPTS AND EVIDENCE BASED SKILLS FOR PROFESSIONAL CLINICAL PRACTICE (3) LAB. 9. SU. Pr., NURS 2020. Coreq., NURS 3130 and NURS 3110 Application of foundational nursing concepts, skills, and assessment across the lifespan in diverse settings with emphasis on health promotion.

NURS 3210 CLINICAL PHARMACOLOGY (2) LEC. 2. Pr., BIOL 3120. Nurse's role in therapeutic pharmacology.

NURS 3220 EVIDENCE BASED PRACTICE (2) LEC. 2. Pr., NURS 3110. Application of appropriate research findings and other evidence to influence nursing practice.

NURS 3230 PROFESSIONAL NURSING CONCEPTS: ACUTE CARE ACROSS THE LIFESPAN (6) LEC. 6. Pr., NURS 3110 and BIOL 3120 and NURS 3130 and NURS 3141. Coreq., NURS 3210 and NURS 3231 Concepts inherent in the delivery of nursing care for acutely ill individuals and their families.

NURS 3231 PROFESSIONAL NURSING CONCEPTS: ACUTE CARE ACROSS THE LIFESPAN - CLINICAL (4) LAB. 12. SU. Pr., NURS 3110 and BIOL 3120 and NURS 3130 and NURS 3141.Coreq., NURS 3210 and NURS 3230Application of concepts inherent in the delivery of nursing care for acutely ill individuals and their families.

NURS 3330 PROFESSIONAL NURSING CONCEPTS IN THE CHILDBEARING FAMILY AND REPRODUCTIVE HEALTH (4) LEC. 4. Pr., BIOL 3120 and NURS 3210.Coreq., NURS 3331Concepts inherent in reproductive health and nursing care for childbearing families.

NURS 3331 PROFESSIONAL NURSING CONCEPTS IN THE CHILDBEARING FAMILY AND REPRODUCTIVE HEALTH - CLINICAL (2) LAB. 6. SU. Pr., BIOL 3120 and NURS 3210.Coreq., NURS 3330Concepts inherent in reproductive health and nursing care for childbearing families applied in clinical settings.

NURS 3340 PROFESSIONAL NURSING CONCEPTS ACROSS POPULATIONS (3) LEC. 3. Pr., BIOL 3120 and NURS 3210.Coreq., NURS 3341Concepts inherent in the delivery of nursing care for individuals, families and populations in the global community.

NURS 3341 PROFESSIONAL NURSING CONCEPTS ACROSS POPULATIONS CLINICAL (3) LAB. 9. SU. Pr., BIOL 3120 and NURS 3210.Coreq., NURS 3340Application of concepts inherent in the delivery of nursing care for individuals, families, and populations in the global community.

NURS 3940 SPECIAL TOPICS IN NURSING (3) LEC. 3. Focused study plan designed for students who are out of sequence in the professional nursing curriculum. Course may be repeated for a maximum of 6 credit hours.

NURS 3970 GLOBAL PERSPECTIVES IN HEALTH CARE AND SOCIETY (6) LEC. 3. LAB. 3. The objective of the course is to learn about health care in Spain by immersing the student totally into the Spanish language and culture. Course may be repeated for a maximum of 12 credit hours.

NURS 4110 CHILDREN WITH CHRONIC ILLNESS (3) LEC. 3. Pr., Senior-level student in Nursing. Theories and concepts of care of children with special needs and/or chronic health problems. Departmental approval.

NURS 4120 CAMP NURSING (2) LAB. 6. SU. Pr., Senior-level student in Nursing. Clinical experience in the care of children with chronic conditions in a camp setting.

NURS 4130 NURSING THE ART OF CARING (2) LEC. 2. Pr., Senior-level student in Nursing. Philosophical, social, and ethical principles inherent in the practice of professional nursing. Emphasis is on caring as a philosophy to guide clinical practice.

NURS 4140 CONTEMPORARY HEALTH ISSUES OF WOMEN (2) LEC. 2. Pr., Senior-level student in Nursing. Exploration of the health care delivery system as it pertains to women.

NURS 4150 HUMAN SEXUALITY IN HEALTH AND ILLNESS (2) LEC. 2. Pr., Senior-level student in Nursing. Human sexuality in relation to the health-illness continuum. Sexuality across the lifespan.

NURS 4160 SPIRITUAL PERSPECTIVES IN NURSING (2) LEC. 2. Pr., Senior-level student in Nursing. Use of the nursing process to help clients with various spiritual orientations meet spiritual needs.

NURS 4170 CARDIOLOGY FOR NURSES (2) LEC. 2. Pr., Senior-level student in Nursing. Emphasis on the nurse's role in the management of clients with cardiovascular disorders.

NURS 4180 TRAUMA NURSING (2) LEC. 2. Pr., Senior-level student in Nursing. A broad overview of the specialty of trauma nursing and the multiple factors that affect patient care in an emergency or trauma situation.

NURS 4190 AIDS: A SOCIAL EPIDEMIC (2) LEC. 2. Pr., Senior-level student in Nursing. The psychosocial, physical, emotional, ethical, legal, behavioral, and changing health care needs of clients, families, aggregates and populations as a result of AIDS.

NURS 4210 APPLIED CLINICAL NUTRITION FOR NURSES (2) LEC. 2. Pr., NUFS 2000.Pr., Senior-level student in Nursing. Interdependent function of the nurse as a provider of nutritional care for the individual.

NURS 4220 INTEGRATIVE HEALING THERAPIES (2) LEC. 2. Pr., Senior-level student in Nursing. Theoretical and empirical bases for the use of selected interventions in clinical nursing practice.

NURS 4230 PROFESSIONAL NURSING CONCEPTS: CHRONIC AND COMPLEX CONDITIONS (5) LEC. 5. Pr., (BIOL 3210 or BIOL 4400) and NURS 3220 and NURS 3230 and NURS 3231 and NURS 3330 and NURS 3331 and NURS 3340 and NURS 3341. Coreq., NURS 4231 Concepts inherent in the delivery of nursing care for individuals, families, and populations with chronic and/or complex conditions.

NURS 4231 PROFESSIONAL NURSING CONCEPTS: CHRONIC AND COMPLEX CONDITIONS - CLINICAL (5) LAB. 15. SU. Pr., (BIOL 3210 or BIOL 4400) and NURS 3220 and NURS 3230 and NURS 3231 and NURS 3330 and NURS 3331 and NURS 3340 and NURS 3341. Coreq., NURS 4230 Applications of concepts inherent in the delivery of nursing care for individuals, families, and populations with chronic and/or complex conditions.

NURS 4240 CULTURAL EXPEDITIONS IN HEALTH CARE (2) LEC. 2. Pr., Senior-level student in Nursing. Hands-on experience with different aspects of culture including an overnight stay in a replica of a third world global village.

NURS 4250 COMPLICATIONS OF OBSTET NURSING (2) LEC. 2. Pr., Senior-level student in Nursing. Concepts and theories underlying nursing care of complications of the childbearing family.

NURS 4260 MENTORING IN NURSING (2) LEC. 1. LAB. 3. Pr., NURS 3720 and NURS 3721. Pr., Senior-level student in Nursing. Theoretical and practical aspects of peer mentoring.

NURS 4270 PERIOPERATIVE NURSING (2) LEC. 1. LAB. 6. Pr., Senior-level student in Nursing. A broad overview focusing on the specialty area of peri-operative nursing and the multiple factors that will impact patient care from the preoperative phase through the recovery phase. Fall.

NURS 4280 ANIMAL-ASSISTED THERAPY (2) LEC. 2. Theoretical foundations and guidelines for practice of animal-assisted therapy.

NURS 4810 PROFESSIONAL NURSING LEADERSHIP IN MICROSYSTEMS (2) LEC. 2. Pr., (BIOL 3210 or BIOL 4400) and NURS 3220 and NURS 3230 and NURS 3231 and NURS 3340 and NURS 3331 and NURS 3330 and NURS 3341. Coreq., NURS 4230 and NURS 4231 The study of leadership and management concepts for direct patient care.

NURS 4900 INDEPENDENT STUDY IN NURSING (1-6) IND. Directed readings and/or clinical study in student-selected areas related to nursing.

NURS 4910 PROFESSIONAL NURSING LEADERSHIP IN COMPLEX SYSTEMS (3) LEC. 3. Pr., NURS 4230 and NURS 4231 and NURS 4810. Coreq., NURS 4911 Study of leadership concepts in complex systems influencing health care.

NURS 4911 LEADERSHIP PRACTICUM (2) LAB. 6. SU. Pr., NURS 4230 and NURS 4231 and NURS 4810. Coreq., NURS 4910 Application of leadership concepts in complex systems influencing health care.

NURS 4920 TRANSITIONS TO PROFESSIONAL NURSING (2) LEC. 2. Pr., NURS 4230 and NURS 4231 and NURS 4810. Synthesis of concepts essential for professional nursing.

NURS 4921 NURSING PRACTICE PRECEPTORSHIP (5) LAB. 15. SU. Pr., NURS 4230 and NURS 4231 and NURS 4810. Coreq., NURS 4920 Application of concepts in the transition into professional nursing.

NURS 4940 SPECIAL TOPICS IN NURSING (1-4) LEC. SU. Focused study plan designed for students who have not met an identified curricular benchmark. Course may be repeated for a maximum of 4 credit hours.

NURS 4997 HONORS THESIS (1-3) IND. Pr., Honors College. Course may be repeated for a maximum of 3 credit hours.

NURS 7110 ADVANCED PHYSICAL ASSESSMENT/APPLIED CLINICAL CONCEPTS I (3) LEC. 2, LEC. 4. Pr., NURS 7210 or (NURS 7220 or NURS 7230 or NURS 7240 or NURS 7310). Focus is on assessment, knowledge and techniques required for master's level prepared nurses in a clinical setting. Admission to the MSN Program or departmental approval.

NURS 7220 ROLES AND ISSUES OF THE PRIMARY CARE PRACTITIONER (3) LEC. 3. This course explores the complex process of role development for the advanced practice nurse within current health care systems. Competencies and role development issues of advanced nursing practice are included. Role transition and strategies for facilitating role acquisition and implementation including social, legal and ethical issues governing advanced practice in primary health care are addressed. Admission to the MSN Program or departmental approval.

NURS 7250 HEALTHCARE POLICY AND ETHICS FOR THE NURSE LEADER (3) LEC. 3. This course addresses the U.S. health care delivery system at micro and macro levels, problems, principles and the alternatives for managing problems in a systematic manner. Health policy, economic, and ethical principles and the relationship of these concepts to advocacy and leadership roles are explored. Admission to the MSN Program or departmental approval.

NURS 7320 DEVELOPMENT AND EVALUATION OF EDUCATIONAL PROGRAMS IN NURSING (3) LEC. 3. Pr., NURS 7210 and NURS 7230 and NURS 7310. Analysis and evaluation of curriculum construction, selection of teaching strategies for diverse groups and individuals, and evaluation of learning outcomes in education of patients, health providers, and nursing students. Admission to the MSN Program or departmental approval.

NURS 7330 DIAGNOSTIC REASONING AND CLINICAL MANAGEMENT (3) LEC. 3. Pr., NURS 7110. Focus is on the process of collecting data and arriving at diagnostic and therapeutic conclusions to guide clinical management for patients. Preq; NSG 6671, NSG 6649, NURS 7110.

NURS 7340 ADVANCED THEORETICAL FOUNDATIONS OF NURSING (3) LEC. 3. Students explore the theoretical foundations of advanced nursing practice. The roles of the Master's prepared nurse are explored, along with central concepts inherent to nursing practice. Theories from nursing and related disciplines are examined with emphasis on application of theory to nursing practice. Admission to the MSN Program or departmental approval.

NURS 7350 QUALITY, SAFETY, AND PREVENTION USING TECHNOLOGY (3) LEC. 3. This course examines the concepts of clinical illness prevention, population health, quality and safety in health care, and the use of information technologies. Admission to the MSN Program or departmental approval.

NURS 7360 EVIDENCE-BASED PRACTICE I (2) LEC. 2. This course is designed to introduce the Master's student to evidence based practice. The foundations of EBP are explored including search strategies, research critique, and applications of EBP in advanced practice. Synthesis and evaluation of evidence using various models will be discussed. Admission to the MSN Program or departmental approval.

NURS 7370 EVIDENCE-BASED PRACTICE II (2) LEC. 2. Pr., NURS 7360. This course focuses on the concepts necessary for implementation and evaluation of an EBP project. Data collection tools, data analysis, and the presentation of data will be explored. Students will discuss change strategies, protection of human subjects, and the development of measurable outcomes. Admission to the MSN Program or departmental approval.

NURS 7440 PRIMARY CARE I: WOMEN AND CHILDREN (3) LEC. 1, SEM. 2. Pr., NURS 7330. Focus is on the primary care nurse practitioner's role in managing common acute and chronic health care problems in the adult and geriatric population in a variety of primary care settings. Admission to the MSN Program, completion of pre-requisites, or departmental approval.

NURS 7550 PRIMARY CARE II: ADULTS AND ELDERLY (3) LEC. 1, SEM. 2. Pr., NURS 7330. Focus is on the primary care nurse practitioner's role in managing common acute and chronic health care problems in the adult and problems in the adult and in a variety of primary care settings. Admission to the MSN Program, completion of pre-requisites, or departmental approval.

NURS 7810 PRACTICUM IN TEACHING (3) PRA. 3. Pr., NURS 7340 and NURS 7350 and NURS 7360 and NURS 7320 and NURS 7370 and NURS 7250 and EDLD 8500. Synthesis of educational theories, research, and strategies in applying the roles of the educator in teaching clients, students, or care providers. Selected educational settings provide opportunities to practice the roles of the educator under guidance of qualified preceptor. This course will be a combination of professional seminars and teaching practice (180 hours). Admission to the MSN Program or departmental approval.

NURS 7920 PRIMARY CARE PRACTICUM (7) LEC. 1, LEC. 6. Pr., NURS 7440 and NURS 7550. This course focus is on the application of knowledge and skills in the transition to the role of the primary care nurse practitioner. Admission to the MSN Program, completion of pre-requisites, or departmental approval.

NURS 7930 DIRECTED STUDIES IN NURSING (1-6) LEC. Directed independent study plan focuses on enrichment needs or special opportunities. Departmental approval, see SON advisor.

NURS 7940 EVIDENCE-BASED PRACTICE III (2) LEC. 2. Pr., NURS 7370 and NURS 7360. The focus of this course is the application of evidenced based practice concepts in advanced nursing practice. EBP III is a practicum course in which the student may implement the project proposed in EBP I & II or prepare a manuscript from that project that synthesizes the evidence and submit to a national refereed professional journal. Admission to the MSN Program or departmental approval.

Nutrition - NTRI

Courses

NTRI 2000/2003 NUTRITION AND HEALTH (3) LEC. 3. Principles of human nutrition and food choices related to the health of individuals. Credit will not be given for both NTRI 2000 and NTRI 2007.

NTRI 2007 HONORS NUTRITION AND HEALTH (3) LEC. 3. Pr., Honors College. Principles of human nutrition and food choices related to the health of individuals. Topics similar to NTRI 2000 but covered in greater depth with classroom discussion of controversial topics. Credit will not be given for both NTRI 2000 and NTRI 2007.

NTRI 2010 BASIC SPORTS NUTRITION (3) LEC. 3. Pr., (BIOL 1020 or BIOL 1027) or (NTRI 2000 or NTRI 2007). An introductory course on the relationship between nutrition and sports performance. Topic areas to be covered include energy, carbohydrates, protein/ amino acids, fluids, vitamins, minerals, body weight and supplement use as they directly relate to sports performance.

NTRI 2050 SCIENCE OF FOOD (4) LEC. 3. LAB. 3. Pr., (NTRI 2000 or NTRI 2007) and CHEM 1030 and CHEM 1031 and (BIOL 1020 or BIOL 1027). Basic chemical and biological principles of food and food preparation methods, concepts of food quality, nutrition, sanitation, processing and food laws. Departmental approval.

NTRI 2070 INTRODUCTION TO DIETETICS AND NUTRITION (1) LEC. 1. Pr., NTRI 2000 or NTRI 2007. Overview of professional roles and responsibilities in dietetics and nutrition with emphasis on professional development and conduct. Spring. Departmental approval.

NTRI 3040 FOOD SYSTEMS OPERATIONS (2) LEC. 2. Pr., NTRI 2050. Junior standing. Principles for managing resources required in planning, purchasing, preparing and serving high quality food in food service operations. Fall.

NTRI 3041 FOOD SYSTEMS OPERATIONS LABORATORY (2) LAB. 4. Coreq., NTRI 3040. Laboratory experience in food service operations. Food safety certification is included. TB test.

NTRI 3380 STUDY ABROAD OPPORTUNITIES IN HUMAN SCIENCES (1) LEC. 1. Exploration of study abroad opportunities for students interested in the International Minor in Human Sciences.

NTRI 3620 COMMUNITY NUTRITION (2) LEC. 2. Pr., NTRI 2000 or NTRI 2007. Study of populations at nutrition risk, population-specific public health nutrition problems, and health care system programs. Fall.

NTRI 3720 NUTRITIONAL ASSESSMENT (2) LEC. 1. LAB. 2. Pr., P/C, BCHE 3180 or (NTRI 2000 or NTRI 2007). Identification and comparison of techniques for evaluating nutritional status including dietary intake, anthropometry and biochemical indices. Spring.

NTRI 3750 NUTRITION EDUCATION (2) LEC. 2. Pr., PSYC 2010 and NTRI 2000. Coreq., NTRI 5030. A variety of perspectives and strategies designed to facilitate dietary behaviors conducive to health and well-being.

NTRI 3760 NUTRITION COUNSELING (2) LEC. 2. Pr., BCHE 3180. Coreq., NTRI 3720. Counseling techniques that foster healthful changes in diet behaviors.

NTRI 3940 COMMUNITY SERVICE (3-9) LEC. 1. LAB. 6. Application of NTRI-related knowledge to real-life situations through participation in directed community service experiences. A) nutrition; B) hospitality; C) general NTRI. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

NTRI 4090 PROFESSIONAL ISSUES IN DIETETICS AND NUTRITION (1) LEC. 1. SU. Pr., NTRI 2070. Coreq., NTRI 5020. Junior standing. Professional issues and trends affecting dietetics and nutrition practice; planning for professional advancement; includes externship.

NTRI 4410 EXPERIMENTAL FOOD SCIENCE (3) LEC. 2. LAB. 3. Pr., NTRI 2050. Functions and interactions of ingredients and food constituents, factors affecting food quality. Spring.

NTRI 4580 FOOD AND CULTURE (2) LEC. 2. Cultural and social factors affecting food habits and nutritional status of populations throughout the world. Departmental approval.

NTRI 4620 PUBLIC HEALTH NUTRITION (3) LEC. 3. Pr., STAT 2510. Coreq., NTRI 5820. Population-focused approaches that facilitate healthy diets through policy development and environmental changes.

NTRI 4820 MACRONUTRIENTS (3) LEC. 3. Pr., (NTRI 2000 or NTRI 2007) and P/C, BCHE 3180 and BIOL 2510. Physiological and biochemical basis for energy-yielding nutrients; structure, function, dietary requirements, digestion, absorption, transport and metabolism of macronutrients. Spring.

NTRI 4830 VITAMINS AND MINERALS (3) LEC. 3. Pr., (NTRI 2000 or NTRI 2007) and P/C, BCHE 3180. Metabolism, dietary needs, deficiency symptoms and food sources of vitamins and minerals in humans. Spring.

NTRI 4930 DIRECTED STUDIES (1-8) AAB/IND. Independent reading or research in a content area of special interest; supervised by a faculty member. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

NTRI 4970 SPECIAL TOPICS (1-3) LEC. A) Nutrition, B) Hotel and Restaurant Management. A course offering unique or current issues not covered in a regularly scheduled course. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

NTRI 4980 UNDERGRADUATE RESEARCH AND STUDY (1-9) AAB/IND. Directed research under faculty supervision. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

NTRI 4997 HONORS THESIS (1-3) IND. SU. Pr., Honors College. Research in specialized topics. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

NTRI 5010 MEDICAL NUTRITION ASSESSMENT (2) LEC. 2. Pr., BCHE 3180. Coreq., NTRI 3760. Techniques for the evaluation of nutritional status including anthropometric, biochemical, physical, and selected dietary assessments.

NTRI 5020 MEDICAL NUTRITION I (3) LEC. 3. Pr., NTRI 4820 and NTRI 4830 and NTRI 5010. Coreq., NTRI 4090. Application of nutrition principles to the pathophysiological and biochemical changes associated with endocrine, cardiovascular and gastrointestinal tract diseases. Credit will not be given for both NTRI 5020 and NTRI 6020. Fall. Departmental approval.

NTRI 5030 MEDICAL NUTRITION II (3) LEC. 3. Pr., NTRI 5020. Coreq., NTRI 3750. Application of nutrition principles to the pathophysiological and biochemical changes associated with sepsis, burns, and trauma as well as renal, respiratory and immune system diseases. Credit will not be given for both NTRI 5030 and NTRI 6030. Spring. Departmental approval.

NTRI 5100 NUTRITION IN DISEASE PREVENTION (2) LEC. 2. Pr., NTRI 4820 and NTRI 4830. The functions, safety, and efficacy of selected nutrients and herbs in the prevention and/or treatment of selected diseases/conditions.

NTRI 5380 STUDY/TRAVEL IN NUTRITION, DIETETICS AND HOSPITALITY MANAGEMENT (1-6) AAB/FLD. Concentrated study in nutrition, food science, or hotel and restaurant management in the US or international locations. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

NTRI 5560 NUTRITION AND FOOD SERVICE MANAGEMENT (4) LEC. 4. Pr., P/C, NTRI 3041 and ACCT 2810. Organization, management and marketing of food and nutrition service systems in health care facilities. Credit will not be given for both NTRI 5560 and NTRI 6560. Spring. Departmental approval.

NTRI 5620 SPORTS NUTRITION (3) LEC. 3. Pr., BIOL 2510 and BCHE 3180. Relationships between energy, carbohydrates, proteins, fluids, vitamins, minerals, body weight, ergogenic aids and physical performance. Credit will not be given for both NTRI 5620 and NTRI 6620. Spring. Departmental approval.

NTRI 5820 NUTRITION IN THE LIFE CYCLE (3) LEC. 3. Pr., NTRI 4830. Metabolic and clinical aspects of nutrition during key periods of the life cycle emphasizing pregnancy, infancy, adolescence and late adulthood. Credit will not be given for both NTRI 5820 and NTRI 6820. Fall. Departmental approval.

NTRI 5830 NUTRITIONAL GENOMICS (3) LEC. 3. Pr., NTRI 4820 and NTRI 4830. Principles of nutrient-gene interactions and how these interactions influence human health and disease. May count either NTRI 5830 or NTRI 6830.

NTRI 5910 CLINICAL PRACTICUM IN DIETETICS (1) PRA. 3. SU. Coreq., NTRI 5020 and NTRI 5010 and NTRI 5030. Application of the practice of dietetics in a clinical or community setting. Course may be repeated for a maximum of 3 credit hours.

NTRI 6020 MEDICAL NUTRITION I (3) LEC. 3. Pr., NTRI 3720 and NTRI 4820 and NTRI 4830. Application of nutrition principles to the pathophysiological and biochemical changes associated with endocrine, cardiovascular, and gastrointestinal diseases. Credit will not be given for both NTRI 6020 and NTRI 5020. Fall. Departmental approval.

NTRI 6030 MEDICAL NUTRITION II (3) LEC. 3. Application of nutrition principles to the pathophysiological and biochemical changes associated with sepsis, burns, and trauma as well as renal, respiratory and immune system diseases. Credit will not be given for both NTRI 5030 and NTRI 6030. Spring. Departmental approval.

NTRI 6380 STUDY/TRAVEL IN NUTRITION, DIETETICS AND HOSPITALITY MANAGEMENT (1-6) AAB/FLD. Concentrated study in nutrition, food science, or hotel and restaurant management in the US or international locations. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

NTRI 6560/6566 NUTRITION AND FOOD SERVICE MANAGEMENT (4) LEC. 4. Pr., NTRI 3041 and ACCT 2910. Organization, management and marketing of food and nutrition service systems in health care facilities. Credit will not be given for both NTRI 6560 and NTRI 5560. Spring. Departmental approval.

NTRI 6620 SPORTS NUTRITION (3) LEC. 3. Pr., BIOL 2510 and BCHE 3180. Relationships between energy, carbohydrates, proteins, fluids, vitamins, minerals, body weight, ergogenic aids and physical performance. Credit will not be given for both NTRI 6620 and NTRI 5620. Spring. Departmental approval.

NTRI 6820 NUTRITION IN THE LIFE CYCLE (3) LEC. 3. Pr., NTRI 4830. Metabolic and clinical aspects of nutrition during key periods of the life cycle emphasizing pregnancy, infancy, adolescence and late adulthood. Credit will not be given for both NTRI 6820 and NTRI 5820. Fall. Departmental approval.

NTRI 7050/7056 METHODS OF RESEARCH (2) LEC. 2. Research methods and designs applicable to disciplines represented in nutrition dietetics and hospitality management. Credit is not allowed for both NTRI 7050 and NTRI 7056. Spring. Departmental approval.

NTRI 7280 LABORATORY METHODS IN FOOD SCIENCE AND NUTRITION (3) LEC. 2. LAB. 3. Modern laboratory techniques and instruments used in human nutrition and food science research. Departmental approval.

NTRI 7500 MINERALS (2) LEC. 2. Sources, digestion, absorption, transport, function and metabolism of major and trace minerals in the human body. Fall. Departmental approval.

NTRI 7510 VITAMINS (2) LEC. 2. Advanced study of metabolism, requirements, interactions and deficiencies of the fat and water soluble vitamins as related to humans. Fall. Departmental approval.

NTRI 7520 MACRONUTRIENTS INTEGR METABO (4) LEC. 4. Advanced study of energy metabolism, digestion, absorption, transport and integrative metabolism of macronutrients. Summer.

NTRI 7530 HUMAN NUTRIENT METABOLISM (3) LEC. 3. Advanced study of nutrition and metabolism, as related to humans. Department approval. Credit will not be given for both NTRI 7530 or NTRI 7536 once developed, or BCHE 6180 and BCHE 6190, and/or BCHE 7200.

NTRI 7850/7856 RESEARCH SEMINAR FOR MASTER'S PROGRAM (1) SEM. 1. Current topics in nutrition, dietetics and hospitality management presented by M.S. graduate students. Departmental approval.

NTRI 7910 PRACTICUM IN NUTRITION AND DIETETICS (1-12) PRA. SU. Application of principles and theories of nutrition in a professional setting. No more than three hours may count toward a graduate degree. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

NTRI 7930/7936 ADVANCED INDEPENDENT STUDY (1-6) IND. Advanced reading or research approved and supervised by a faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

NTRI 7960/7966 SPECIAL PROBLEMS (1-5) IND. Critical analysis of classic and current research. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

NTRI 7980/7986 NONTHESIS RESEARCH (1-6) RES. SU. In-depth work in a particular project related to hotel and restaurant management. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

NTRI 7990 RESEARCH AND THESIS (1-10) MST. Research in an area of specialization. Departmental approval. Course may be repeated with change in topics.

NTRI 8850 RESEARCH SEMINAR FOR DOCTORAL PROGRAM (1-2) SEM. Required for doctoral students in nutrition and hospitality management. Advanced topics in nutrition and food science presented by doctoral students. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

NTRI 8910 SUPERVISED TEACHING (1) AAB/IND. 1. Practical experience teaching in the classroom. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

NTRI 8970/8976 ADVANCED TOPICS IN NUTRITION, DIETETICS AND HOSPITALITY MANAGEMENT (1-6) LEC. A) Nutrition, B) Hotel and Restaurant Management. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

NTRI 8990 RESEARCH AND DISSERTATION (1-10) AAB/DSR. Research in an area of specialization. Departmental approval. Course may be repeated with change in topics.

Pharmaceutical Sciences - PYPS

Courses

PYPS 5230 DRUG PRODUCTS I (3) LEC. 3. Pr., PYDI 5100 and PYDI 5120. Physical-chemical and biopharmaceutical principles and technologies used in the preparation of solid pharmaceutical dosage forms and novel drug delivery systems. Fall.

PYPS 5310 PHARMACOLOGY I (3) LEC. 3. Biochemical and physiological effects, action mechanism, absorption, distribution, biotransformation, excretion, therapeutic and other uses of drugs.

PYPS 5320 PHARMACOLOGY II (3) LEC. 3. Biochemical and physiological effects, action mechanism, absorption, distribution, biotransformation, excretion and therapeutic and other uses of drugs.

PYPS 5330 DRUG PRODUCTS II (3) LEC. 3. Pr., PYPS 5230 and PYDI 5200 and PYDI 5220. Physical-chemical and biopharmaceutical principles and technologies used in the preparation of solid pharmaceutical dosage forms and novel drug delivery systems. Continuation of PYPS 5230. Spring.

PYPS 5350 TOXICOLOGY (3) LEC. 3. The basic science of poisons including the acute and chronic toxicology of common environmental, agricultural, industrial, commercial, medicinal and naturally occurring substances.

PYPS 5360 CELLULAR PHARMACOLOGY (3) LEC. 3. Cytological basis of pharmacodynamics including drug receptor interactions, drug metabolism, and characteristics of adverse drug reactions.

PYPS 5370 FUNDAMENTALS OF BIONUCLEONICS (3) LEC. 3. Theoretical and practical applications of trace-level radioactivity for research application to pharmacy and allied sciences.

PYPS 5390 NEUROPHARMACOLOGY OF DRUG ABUSE (2) LEC. 2. Pr., PYDI 5300. An in-depth study of drugs of abuse, including mechanisms of action, pharmacokinetics, addiction, physical dependence and the effects of drug use during pregnancy. Substance abuse treatment strategies will also be discussed. Departmental approval.

PYPS 5500 PHARMACOGNOSY (3) LEC. 3. Medicinal plants, folk medicines, herbal drugs and poisonous plants including constituents and uses.

PYPS 5800 MOLECULAR IMAGING (2) LEC. 2. State-of-the-art survey of molecular imaging techniques that are available and their use to monitor the progression of various human diseases. Departmental approval.

PYPS 5900 SPECIAL PROBLEMS IN PHARMACAL SCIENCES (1-3) LEC. Selected laboratory research topics in pharmaceutical sciences. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

PYPS 6310 PHARMACOLOGY I (3) LEC. 3. Biochemical and physiological effects, action mechanism, absorption, distribution, biotransformation, excretion, therapeutic and other uses of drugs.

PYPS 6320 PHARMACOLOGY II (3) LEC. 3. Biochemical and physiological effects, action mechanism, absorption, distribution, biotransformation, excretion and therapeutic and other uses of drugs.

PYPS 6330 PHARMACOLOGY III (3) LEC. 3. Biochemical and physiological effects, action mechanism, absorption, distribution, biotransformation, excretion and therapeutic and other uses of drugs.

PYPS 6350 TOXICOLOGY (3) LEC. 3. The basic science of poisons including the acute and chronic toxicology of common environmental, agricultural, industrial, commercial, medicinal and naturally occurring substances.

PYPS 6360 CELLULAR PHARMACOLOGY (3) LEC. 3. Cytological basis of pharmacodynamics including drug receptor interactions, drug metabolism, and characteristics of adverse drug reactions.

PYPS 6370 FUNDAMENTALS OF BIONUCLEONICS (3) LEC. 3. Theoretical and practical applications of trace-level radioactivity for research application to pharmacy and allied sciences.

PYPS 6390 NEUROPHARMACOLOGY OF DRUG ABUSE (2) LEC. 2. An in-depth study of drugs of abuse, including mechanisms of action, pharmacokinetics, addiction, physical dependence and the effects of drug use during pregnancy. Substance abuse treatment strategies will also be discussed. Departmental approval.

PYPS 6500 PHARMACOGNOSY (3) LEC. 3. Medicinal plants, folk medicines, herbal drugs and poisonous plants including constituents and uses.

PYPS 6800 MOLECULAR OF IMAGING (2) LEC. 2. State-of-the-art survey of molecular imaging techniques that are available and their use to monitor the progression of various human diseases. Departmental approval.

PYPS 7000 INTRODUCTION TO GRANT WRITING (2) LEC. 2. Course will train students to prepare NIH RO1 grant applications. Students will prepare mock applications on topics of their choosing. Departmental approval.

PYPS 7010 PHARMACOKINETICS (4) LEC. 4. Pharmacokinetic and pharmacodynamic principles and methods used to study the absorption, distribution, metabolism and excretion of drugs. Departmental approval.

PYPS 7020 SCIENCE AND TECHNOLOGY OF TABLETING (2) LEC. 2. Pr., PYPS 7030. Formulation, compression, coating and evaluation of tablets. Or departmental approval.

PYPS 7021 SCIENCE AND TECHNOLOGY OF TABLETING (2) LAB. 6. Pr., PYPS 7020. This class presents in-depth coverage of various forms of violence from the sociological perspective.

PYPS 7030 DRUG PRODUCTS AND BIOPHARMACEUTICS (4) LEC. 4. Formulation, evaluation, and use of various pharmaceutical dosage forms including biopharmaceutical aspects. Or departmental approval.

PYPS 7040 PHYSICAL PHARMACY (4) LEC. 4. Application of physical chemical principles to dosage form design and evaluation. Or departmental approval.

PYPS 7050 NOVEL DOSAGE FORMS (3) LEC. 3. Pr., PYPS 7030. Theoretical basis and design of controlled release and site specific drug delivery systems. Or departmental approval.

PYPS 7060 FORMULATION AND DELIVERY OF PEPTIDE/PROTEIN DRUGS (3) LEC. 3. Pr., PYPS 7030. Formulation and delivery problems unique to peptide/protein pharmaceuticals and strategies to overcome such problems. Or departmental approval.

PYPS 7070 TRANSPORT PHENOMENA IN PHARMACEUTICAL SYSTEMS (3) LEC. 3. Mechanisms of drug transport in various pharmaceutical dosage forms and biological systems. Elucidation of methods to characterize drug transport phenomena. Correlation of transport phenomena with drug disposition in the body. Emphasis on peptide, protein, and oligonucleotide drugs. Or departmental approval.

PYPS 7080 ADVANCED BIOPHARMACEUTICS (3) LEC. 3. Pr., PYPS 7010. The mathematical and pharmacokinetic relationships between physical and chemical properties of a drug and its dosage form and biological effects.

PYPS 7110 STABILITY KINETICS OF PHARMACEUTICALS (3) LEC. 3. Pr., PYPS 7030. Principles of chemical kinetics as applied to the unique stability problems of the various pharmaceutical dosage forms. Or departmental approval.

PYPS 7230 ADVANCED MEDICINAL CHEMISTRY I (3) LEC. 3. Explanation of the principles of Medicinal Chemistry progressing to qualitative and quantitative descriptions of the synthesis, influence of physical and chemical properties of chemical substances on biological activity and biodisposition. Departmental approval.

PYPS 7240 ADVANCED MEDICINAL CHEMISTRY II (3) LEC. 3. Pr., PYPS 7230. Advanced study of organic medicinal agents featuring organic synthesis, chemical and pharmacological properties and current literature topics. Departmental approval.

PYPS 7250 DRUG ACTION AND DESIGN (3) LEC. 3. Pr., PYPS 7230 and PYPS 7240. Modern molecular modeling methods with emphasis on computer-aided drug design, quantitative structure activity relationships and combinatorial chemistry.

PYPS 7260 SEPARATION SCIENCE (4) LEC. 4. A survey of modern separation science with emphasis on analytical scale techniques including as chromatography, liquid chromatography and elector kinetic separations. Departmental approval.

PYPS 7270 MASS SPECTROMETRY OF ORGANIC COMPOUNDS (4) LEC. 4. A survey of modern techniques in mass spectrometry with emphasis on fragmentation chemistry and structure elucidation. Departmental approval.

PYPS 7300 NEUROPHARMACOLOGY (3) LEC. 3. Pr., PYPS 6310. Neurochemical mechanisms related to the pharmacological actions of medicinal agents affecting the central nervous system.

PYPS 7310 PSYCHOPHARMACOLOGY I (3) LEC. 3. Pr., PYPS 7300. Discussions on anxiety, depression and related disorders.

PYPS 7320 PSYCHOPHARMACOLOGY II (3) LEC. 3. Pr., PYPS 7300. Discussions on schizophrenia, Alzheimer's disease, experimental methods and animal models of disorders.

PYPS 7330 PHARMACOLOGY RESEARCH METHODS (3) LEC. 1. LAB. 9. Experimental design, research methods and data analysis in pharmacology.

PYPS 7360 NEUROPHARMACOLOGY OF DRUG DEPENDENCE (2) LEC. 2. An in-depth study of the neurochemical changes that occur during chronic drug use. Exploration of theories on the causes of drug dependence and current and proposed pharmacological treatments of drug addiction. Departmental approval.

PYPS 7370 PHARMACOLOGY-TOXICOLOGY SEMINAR (1) SEM. 1. SU. Course may be repeated for a maximum of 2 credit hours.

PYPS 7500 METABOLISM AND DISPOSITION XENOBIOTICS (2) LEC. 2. Portals of entry, absorption, distribution and elimination of drugs and xenobiotics. Metabolic mechanisms relevant to chemical structure and principles of pharmacokinetics will be emphasized.

PYPS 7510 ENVIRONMENTAL TOXICOLOGY (3) LEC. 3. Mechanisms of action of agricultural and industrial chemicals, drugs, radiation, metals, gases, air particulates, food additives, plant and food poisons in the environment.

PYPS 7600 HETEROCYCLIC MEDICINAL CHEMISTRY (3) LEC. 3. Pr., CHEM 7220. A survey of chemical nature of heterocyclic moieties of medicinal substances with emphasis on methods of synthesis of medicinally important compounds containing a heterocyclic ring. Departmental approval.

PYPS 7930 DIRECTED STUDIES IN PHARMACAL SCIENCES (1-3) LEC. Selected laboratory research topics in the pharmaceutical sciences. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PYPS 7950 SEMINAR (1) SEM. 1. SU. Required of all 06 PYPS students. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PYPS 7960 SPECIAL PROBLEMS IN PHARMACAL SCIENCES (1-3) IND. Pr., At least 6 credits in PYPS 7000-7999. Selected study topics in the pharmaceutical sciences. Departmental approval and 6 hours of 7000-level courses. Course may be repeated for a maximum of 6 credit hours.

PYPS 7990 RESEARCH AND THESIS (1-10) MST. Research for Masters students. Course may be repeated with change in topics.

PYPS 8930 DIRECTED STUDIES IN PHARMACAL SCIENCES (1-3) LEC. Selected laboratory research topics in the pharmaceutical sciences. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PYPS 8950 SEMINAR (1) SEM. 1. SU. Required of all 09 PYSC students. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PYPS 8960 DIRECTED READINGS IN PHARMACAL SCIENCES (1-3) IND. Pr., At least 6 credits in PYPS 7000-7999. Selected study topics in the pharmaceutical sciences. 09 PYSC standing or departmental approval and 6 hours of 7000-level courses. Course may be repeated for a maximum of 6 credit hours.

PYPS 8990 RESEARCH AND DISSERTATION (1-10) DSR. Research for doctoral students. Course may be repeated with change in topics.

Pharmacy Care Systems - PYPC

Courses

PYPC 5010 PATIENT CENTERED SKILLS (2) LEC. 2. Development of methods for developing positive, therapeutic relationships with patients through the application of communications skills (empathy, assertiveness training, effective listening, etc.) and other behavioral interventions. Fall.

PYPC 5110 PHARMACY LAW AND ETHICS (2) LEC. 2. Basic legal and ethical principles of pharmaceutical care and their effect on the patient drug use process. Spring.

PYPC 5210 PHARMACY PRACTICE DEVELOPMENT, MANAGEMENT, AND EVALUATION I (3) LEC. 3. Overview of the development, management, and evaluation of systems that support the provision of pharmaceutical care for patients in multiple health systems. Fall.

PYPC 5310 PHARMACY PRACTICE DEVELOPMENT, MANAGEMENT, AND EVALUATION II (3) LEC. 3. Pr., PYPC 5210. An overview of the development, management, and evaluation of systems that support the provision of pharmaceutical care for patients in multiple health systems. Continuation of PYPC 5210. Spring.

PYPC 5710 INSTITUTIONAL PHARMACY I (3) LEC. 3. Overview of the nature and scope of institutional pharmacy practice.

PYPC 5720 MOTIVATIONAL INTERVIEWING (2) LEC. 2. Pr., PYPC 5010. Basic and advanced training and exploration of motivational interviewing.

PYPC 7510 HEALTH SERVICES DELIVERY AND EVALUATION (3) LEC. 3. Introduction to basic methods and frameworks for undertaking research and program evaluation within health services organizations and systems. Enrollment in the MS in Pharmacy Care Systems or PHD in Pharmaceutical Science or Departmental approval.

PYPC 7520 SOCIAL AND BEHAVIORAL THEORY IN HEALTH (3) LEC. 3. Introduction to the basic theories of behavior and intervention used in practice and research to evaluate changes in health, humanistic, and economic outcomes among patients. Enrollment in the MS in Pharmacy Care Systems or PhD in Pharmaceutical Science or Departmental approval.

PYPC 7530 PHARMACEUTICAL ECONOMICS, OUTCOMES, AND POLICY (3) LEC. 3. The graduate-level course is intended to introduce students to concepts relevant to pharmaceutical outcomes, economics, and policy. The course provides foundational knowledge surrounding healthcare. Enrollment in the MS in Pharmacy Care Systems or PhD in Pharmaceutical Science or Departmental approval.

PYPC 7540 PHARMACOEPIDEMIOLOGY: METHODS AND APPLICATIONS (3) LEC. 3. The course covers topics in pharmacoepidemiology focusing on the methods and applications of analyzing large, healthcare claims databases and electronic medical records. Enrollment in the MS in Pharmacy Care Systems or PhD in Pharmaceutical Science or Departmental approval. STAT 6110 or equivalent SAS training.

PYPC 7810 HOSPITAL PHARMACY ADMINISTRATION (2) LEC. 2. Administrative and policy-making procedures. Provides understanding of socioeconomic aspects of hospital pharmacy practice and competence in selected administrative skills.

PYPC 7820 RESEARCH METHODS AND DESIGN HEALTH SCIENCE I (2) LEC. 2. Application of scientific methods in health care. Departmental approval.

PYPC 7830 RESEARCH METHODS IN THE HEALTH SCIENCES II (3) LEC. 3. Pr., PYPC 7820. Application of the principles and concepts obtained in PYPC 7820.

PYPC 7840 MEDICATION INFORMATION SYSTEMS (3) LEC. 3. Health system informatics theories and methodologies. Demonstration of how information reduces uncertainty in health-care decision-making.

PYPC 7860 THE PHARMACIST'S ROLE IN IMPROVING PATIENT ADHERENCE (3) LEC. 3. Pr., PYPC 7820. Theories and methodologies involved in adherence to medication regimens.

PYPC 7870 SOCIAL, BEHAVIORAL, AND ADMINISTRATIVE ASPECTS OF PHARMACY PRACTICE (3) LEC. 3. Theories and applications in social, behavioral, and administrative aspects of pharmacy practice and medication use systems.

PYPC 7950 SEMINAR (1) SEM. 1. SU. Required of all Pharmacy Care Systems Masters students. Course may be repeated for a maximum of 6 credit hours.

PYPC 7960 SPECIAL PROBLEMS IN PHARMACY CARE SYSTEMS (2-3) LEC. Special problems. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PYPC 7990 RESEARCH AND THESIS (1-10) MST. Credit hours to be arranged. Course may be repeated with a change in topic. Course may be repeated with change in topics.

PYPC 8950 SEMINAR (1) SEM. 1. SU. Required of all Pharmacy Care Systems doctoral students.

PYPC 8960 SPECIAL PROBLEMS IN PHARMACY CARE SYSTEMS (1-3) LEC. Credit hours to be arranged. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PYPC 8990 RESEARCH AND DISSERTATION (1-10) DSR. Credit hours to be arranged. Course may be repeated with change in topics.

Philosophy - PHIL

Courses

PHIL 1010 INTRODUCTION TO LOGIC (3) LEC. 3. Philosophy Core. Basic logical principles and applications: definition, informal fallacies, categorical logic, elementary propositional logic, analogy and selected inductive inferences.

PHIL 1017 HONORS LOGIC (3) LEC. 3. Pr., Honors College. Philosophy Core. Basic logical principles and applications: definition, informal fallacies, categorical logic, elementary propositional logic, analogy and selected inductive inferences.

PHIL 1020 INTRODUCTION TO ETHICS (3) LEC. 3. Philosophy Core. Major ethical theories from the history of philosophy, their foundations in epistemology and metaphysics, and their extension into social thought.

PHIL 1027 HONORS ETHICS (3) LEC. 3. Pr., Honors College. Philosophy Core. Major ethical theories from the history of philosophy, their foundations in epistemology and metaphysics, and their extension into social thought.

PHIL 1030/1033 ETHICS AND THE HEALTH SCIENCES (3) LEC. 3. Philosophy Core. Ethical inquiry into such major issues as abortion, eugenics, physician-assisted suicide, euthanasia, health-care delivery methods, and informed consent.

PHIL 1037 HONORS ETHICS AND THE HEALTH SCIENCES (3) LEC. 3. Pr., Honors College. Philosophy Core. Ethical inquiry into such major issues as abortion, eugenics, physician-assisted suicide, euthanasia, health-care delivery methods, and informed consent.

PHIL 1040 BUSINESS ETHICS (3) LEC. 3. Philosophy Core. Types of ethical theory; application to such normative issues in commerce as advertising, management, and business abroad.

PHIL 1050 INTRODUCTION TO POLITICAL PHILOSOPHY (3) LEC. 3. Philosophy Core. Principal theories and thinkers in political philosophy from antiquity to the present.

PHIL 1060 PHILOSOPHY EAST AND WEST (3) LEC. 3. Principal thinkers and theories in four philosophical traditions: Indian, Chinese, European, and Arabic.

PHIL 1070 ART, VALUE, AND SOCIETY (3) LEC. 3. Introduction to philosophical aesthetics, focusing on relationship of artistic value and the extra-artistic values of societies that house them.

PHIL 1080 INTRODUCTION TO PHILOSOPHY OF RELIGION (3) LEC. 3. Philosophy of religion, including: God's existence, relationship of reason and faith, religious epistemology, and language.

PHIL 1090 PHILOSOPHY OF RACE GENDER (3) LEC. 3. Philosophical issues associated with race and gender, including role of biology and social construction, nature of prejudice, questions about justice and redress.

PHIL 1100 INTRODUCTION TO PHILOSOPHY (3) LEC. 3. The methods of philosophical inquiry and an examination of selected philosophical topics.

PHIL 1110 PHILOSOPHY OF SCIENCE AND CRITICAL THINKING (3) LEC. 3. A survey of critical thinking techniques that play a role in scientific reasoning, including logic, decision theory, probability theory, causal reasoning, and theory confirmation.

PHIL 3050 AESTHETICS (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area I) Modern and contemporary theories of the nature of art.

PHIL 3060 PHILOSOPHY OF FILM (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area I) Consideration of philosophical issues, both those raised within certain films and those raised by the nature of representation in general. 3 hours 1000-level Philosophy.

PHIL 3100 INTERMEDIATE ETHICS (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area I) An overview of contemporary questions and positions in ethics. Topics may include moral realism, the rationality of moral action, subjectivism and non- cognitivism, naturalism, and various theories of practical reason. 3 hours 1000-level Philosophy.

PHIL 3110 SYMBOLIC LOGIC (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area IV) Propositional logic and predicate logic through relations: natural language and logic; some philosophical problems in logic.

PHIL 3300 PHILOSOPHY OF RELIGION (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area II) Nature of religion, religious experience, religious knowledge, religious theories of humanity and evil, arguments for the existence of God and immortality of the soul.

PHIL 3330 HISTORY OF ANCIENT PHILOSOPHY (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area III) Philosophical thought from the Pre-Socratics through the Hellenistic philosophers, emphasizing Plato and Aristotle.

PHIL 3340 HISTORY OF EARLY MODERN PHILOSOPHY (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area III) Philosophical thought from Descartes to Kant, emphasizing major figures in the rationalist and empiricist traditions.

PHIL 3350 HISTORY OF LATE MODERN AND PRE-ANALYTIC PHILOSOPHY (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area III) Philosophical thought from Kant to the Pre-Analytic philosophers. In addition to Kant, figures may include Schopenhauer, Hegel, Nietzsche, Kierkegaard, James, Brentano, Frege, Meinong, Cook-Wilson, Bradley, and Moore.

PHIL 3360 HISTORY OF EARLY ANALYTIC PHILOSOPHY (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area III) Philosophical thought in the early Analytic period. Central figures will include Russell, Moore, Wittgenstein, and members of the Vienna Circle. 3 hours 1000-level Philosophy.

PHIL 3400 MEDIEVAL PHILOSOPHY (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area III) Philosophical thought from late antiquity through the Middle Ages. Emphasis on Plotinus, Islamic thinkers, Augustine, Abelard, Anselm, and Thomas Aquinas.

PHIL 3500 EPISTEMOLOGY (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area II) The origin, nature, kinds, and validity of knowledge with a consideration of faith, institution, belief, opinion, certainty, and probability.

PHIL 3520 PRAGMATISM AND AMERICAN PHILOSOPHY (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area II) Emphasis on Peirce, James and Dewey. Some philosophical issues examined from a pragmatic viewpoint.

PHIL 3540 PHILOSOPHY OF MIND (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area II) Classical and modern texts on the phenomenology of consciousness and mind-body problems.

PHIL 3550 PHILOSOPHY OF LANGUAGE (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area II) A survey of contemporary philosophical discussions of the nature of language.

PHIL 3600 POLITICAL PHILOSOPHY (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area I) The political thought of both classical and contemporary thinkers, including Plato, Aristotle, Machiavelli, Hobbes, Locke, Mill, Spencer, Marx, Rawls, and Nozick.

PHIL 3640 PHILOSOPHY OF LAW (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area I) The function of law, including judicial reasoning, ground of authority, natural law, legal responsibility, punishment, civil disobedience, and the relation of law to ethics.

PHIL 3660 APPLIED ETHICS (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area I) Advanced philosophical study of the ethical issues that arise in such intellectual endeavors as law, business, military science, engineering, etc.

PHIL 3700 METAPHYSICS (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area II) A critical analysis of such topics as monism and pluralism, freedom and determinism, realism and nominalism, and the mind-body problem.

PHIL 3740 EXISTENTIALISM (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.(Area II) Selected works of such authors as Kierkegaard, Nietzsche, Sartre, Jaspers, and Heidegger.

PHIL 3970 SPECIAL TOPICS (3) LEC. 3. Pr., At least 3 credits in PHIL 1000-1999.Topics vary. Course may be repeated for a maximum of 6hours.

PHIL 4110 METALOGIC (3) LEC. 3. Pr., PHIL 3100.(Area IV) Soundness, completeness, and other metalogical results for propositional and predicate logics.

PHIL 4500 PHILOSOPHY OF SCIENCE (3) LEC. 3. Pr., At least 6 credits in PHIL 3000-3999.(Area II) Empirical meaning, verifiability, measurement, probability, causality and determinism.

PHIL 4540 PHENOMENOLOGY (3) LEC. 3. Pr., At least 6 credits in PHIL 3000-3999.(Area II) The phenomenological method and its application in the works of William James, Husserl, Heidegger, Sartre, and Merleau-Ponty.

PHIL 4620 MODERN ETHICAL THEORIES (3) LEC. 3. Pr., At least 6 credits in PHIL 3000-3999.(Area I) Recent analyses of the meanings, presuppositions, and problems of ethical terms and judgments.

PHIL 4700 PLATO (3) LEC. 3. Pr., At least 6 credits in PHIL 3000-3999.(Area III) Plato's Methodology, epistemology, metaphysics, ethics, political theory.

PHIL 4750 ARISTOTLE (3) LEC. 3. Pr., At least 6 credits in PHIL 3000-3999.(Area III) Aristotle's logic, epistemology, metaphysics, ethics, political theory, and psychology.

PHIL 4780 KANT AND TRANSCENDENTAL IDEALISM (3) LEC. 3. Pr., At least 6 credits in PHIL 3000-3999.(Area III) The philosophy of Kant in particular but also of the early Fichte and Schelling, and of neo-Kantians.

PHIL 4960 SPECIAL PROBLEMS IN PHILOSOPHY (1-6) IND. Specific reading programs on a particular philosopher, period or problem. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PHIL 4967 HONORS SPECIAL PROBLEMS IN PHILOSOPHY (1-3) IND. Pr., Honors College. Reading programs on a philosopher, period or problem. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

PHIL 4970 SPECIAL TOPICS (3) LEC. 3. Pr., At least 6 credits in PHIL 3000-3999. Advanced topics in ethics and value theory, metaphysics and epistemology, or history of philosophy. Emphasis on readings drawn from the contemporary, professional literature. Course may be repeated for a maximum of 9 credit hours. Area distribution requirement fulfilled depends on class content. 6 hours 3000-level Philosophy.

PHIL 4997 HONORS THESIS (1-3) IND. Pr., Honors College. Senior thesis for students in the university Honors College. Course may be repeated for a maximum of 3 credit hours.

PHIL 5950 SEMINAR (1-3) SEM. The content will vary from movements of thought to an intensive study of one of the great thinkers. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PHIL 6950 SEMINAR (1-3) SEM. The content will vary from movements of thought to an extensive study of one of the great thinkers. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

Physical Education - PHED

Courses

PHED 1200 CARDIO RESPIRATORY: FITNESS (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with the development and maintenance of cardio-respiratory functioning. Activities may include, but are not limited to running (jogging) swimming, cycling and aerobic dance. Course may be repeated with a change in topic. Course may be repeated with change in topics.

PHED 1210 CARDIO RESPIRATORY: AEROBIC DANCE (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with the development and maintenance of cardio-respiratory functioning in aerobic dance.

PHED 1220 CARDIO RESPIRATORY: CIRCUIT TRAINING (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with the development and maintenance of cardio-respiratory functioning in circuit training.

PHED 1230 CARDIO RESPIRATORY: JOGGING (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with the development and maintenance of cardio-respiratory functioning in jogging.

PHED 1240 CARDIO RESPIRATORY: SWIM FOR FITNESS (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with the development and maintenance of cardio-respiratory functioning in swim for fitness.

PHED 1250 CARDIO RESPIRATORY: WATER AEROBICS (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with the development and maintenance of cardio-respiratory functioning in water aerobics.

PHED 1300 FITNESS AND CONDITIONING (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness. Activities may include, but are not limited to calisthenics and weight training. Course may be repeated with a change in topic. Course may be repeated with change in topics.

PHED 1310 FITNESS: BODYBUILDING (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness in bodybuilding.

PHED 1320 FITNESS: LIFETIME ACTIVITY (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness in lifetime activity.

PHED 1330 FITNESS: WEIGHT CONTROL (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness in weight control.

PHED 1340 FITNESS: WEIGHT TRAINING (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness in weight training.

PHED 1350 FITNESS WEIGHT TRAINING WOMEN (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness for weight training for women.

PHED 1360 FITNESS: WEIGHT TRAINING II (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with the development and maintenance of general physical fitness in weight training II.

PHED 1400 TEAM SPORTS (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific team sport. Team sports may include, but are not limited to, volleyball, basketball and softball. Course may be repeated with change in topic.

PHED 1410 TEAM SPORTS: BASKETBALL (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific team sport.

PHED 1420 TEAM SPORTS: FLAG FOOTBALL (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific team sport.

PHED 1430 TEAM SPORTS: SOCCER (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific team sport.

PHED 1440 TEAM SPORTS: SOFTBALL (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific team sport.

PHED 1450 TEAM SPORTS: VOLLEYBALL (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific team sport.

PHED 1500 INDIVIDUAL SPORTS (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific individual sport. Sports may include, but are not limited to tennis, golf and racquetball. Course may be repeated with a change in topic. Course may be repeated with change in topics.

PHED 1510 INDIVIDUAL SPORTS: BOWLING (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific individual sport.

PHED 1520 INDIVIDUAL SPORTS: GOLF (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific individual sport.

PHED 1530 INDIVIDUAL SPORTS: GOLF II (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific individual sport.

PHED 1540 INDIVIDUAL SPORTS: RACQUETBALL (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific individual sport.

PHED 1550 INDIVIDUAL SPORTS: TENNIS (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific individual sport.

PHED 1560 INDIVIDUAL SPORTS: TENNIS II (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific individual sport.

PHED 1600 PERFORMANCE ACTIVITIES (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific performance activity. Activities may include, but are not limited to, dance and gymnastics. Course may be repeated with a change in topic. Course may be repeated with change in topics.

PHED 1610 PERFORM ACTIVITY - PILATES (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific performance activity.

PHED 1620 PERFORMANCE ACTIVITY: KARATE (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific performance activity.

PHED 1630 PERFORMANCE ACTIVITY: TAE KWON DO (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific performance activity.

PHED 1640 PERFORMANCE ACTIVITY: YOGA (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with a specific performance activity.

PHED 1700 AQUATICS: OTHER (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with specific aquatic skills. Activities may include, but are not limited to, swimming skills instruction, lifeguard training, and scuba diving. When appropriate, successful completion of the course will lead to Red Cross certification or certification by other agencies. Course may be repeated for a maximum of 4 credit hours.

PHED 1710 AQUATICS: BEGINNING KAYAKING (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

PHED 1720 AQUATICS: ADVANCED KAYAKING (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

PHED 1730 AQUATICS: KEELBOAT SAILING (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

PHED 1740 AQUATICS: LIFEGUARD TRAINING (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

PHED 1750 AQUATICS: BEGINNING SWIMMING (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

PHED 1760 AQUATICS: SCUBA (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

PHED 1770 AQUATICS: WATER SKIING (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

PHED 1780 AQUATICS: ADVANCED WATER SKIING (2) LEC. 1. LAB. 2. Basic concepts and physical activities associated with specific aquatic skills.

PHED 1800 VARSITY MEN'S SPORTS: STRENGTH AND CONDITION (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topic.

PHED 1810 VARSITY MEN'S SPORTS: FOOTBALL (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1820 VARSITY MEN'S SPORTS: BASKETBALL (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1830 VARSITY MEN'S SPORTS: TRACK (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1840 VARSITY MEN'S SPORTS: CROSS COUNTRY (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1850 VARSITY MEN'S SPORTS: SWIMMING AND DIVING (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1860 VARSITY MEN'S SPORTS: GOLF (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1870 VARSITY MEN'S SPORTS: TENNIS (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1880 VARSITY MEN'S SPORTS: BASEBALL (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1900 VARSITY WOMEN'S SPORTS: SOCCER (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1910 VARSITY WOMEN'S SPORTS: GYMNASTICS (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1920 VARSITY WOMEN'S SPORTS: BASKETBALL (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1930 VARSITY WOMEN'S SPORTS: TRACK (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1940 VARSITY WOMEN'S SPORTS: CROSS COUNTRY (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1950 VARSITY WOMEN'S SPORTS: SWIMMING AND DIVING (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1960 VARSITY WOMEN'S SPORTS: GOLF (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1970 VARSITY WOMEN'S SPORTS: TENNIS (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1980 VARSITY WOMEN'S SPORTS: SOFTBALL (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

PHED 1990 VARSITY WOMEN'S SPORTS: VOLLEYBALL (1) LEC. 1. SU. Skills and training associated with participation in varsity sports. Course may be repeated with change in topics.

Physics - PHYS

Courses

PHYS 1000 FOUNDATIONS OF PHYSICS (4) LEC. 3. LAB. 2. Science Core. Newton's Laws, momentum and energy, solids, liquids, gases, plasma, thermodynamics, electricity, magnetism, light, atomic and nuclear physics. Students who have previous credit in any higher-numbered physics course may not receive credit.

PHYS 1150 ASTRONOMY (4) LEC. 3. LAB. 3. Science Core. Open to non-science majors. Earth, the solar system, stars, neutron stars, black holes, supernova, galaxies, the expanding universe, and modern cosmological theories.

PHYS 1500 GENERAL PHYSICS I (4) LEC. 3. LAB. 3. Pr., MATH 1130. Science Core. Introduction to Newton's Laws, gravitation and cosmology, concept of conservation laws, solids and fluids, thermodynamics. Math at level of MATH 1130 or higher is expected.

PHYS 1510 GENERAL PHYSICS II (4) LEC. 3. LAB. 3. Pr., PHYS 1500. Science Core. Electricity and magnetism, AC circuits, waves, nuclear physics, radioactivity and particle physics. Physics at the level of PHYS 1500 or higher is expected.

PHYS 1600 ENGINEERING PHYSICS I (4) LEC. 3. LAB. 3. Pr., P/C, MATH 1610.Science Core. Introduction to Newton's Laws, gravitation, cosmology, conservation of energy, momentum and angular momentum, special relativity, and fluids using introductory calculus. Math at the level of MATH 1610 or higher is expected, at least concurrently.

PHYS 1607 HONORS PHYSICS I (4) LEC. 3. LAB. 3. Pr., Honors College.Science Core. Honors version of PHYS 1600. Membership in the Honors College or Departmental approval required. Recommended for Physics majors. Math at the level of MATH 1610 or higher is expected, at least concurrently.

PHYS 1610 ENGINEERING PHYSICS II (4) LEC. 3. LAB. 3. Pr., PHYS 1600 and P/C, MATH 1620.Science Core. Thermodynamics, electricity and magnetism, simple AC circuits, waves, and geometric optics. Physics at the level of PHYS 1600 or higher is expected. Math at the level of MATH 1620 or higher is expected at least concurrently.

PHYS 1617 HONORS PHYSICS II (4) LEC. 3. LAB. 3. Pr., Honors College.Science Core. Honors version of PHYS 1610. Membership in the Honors College or Departmental approval required. Recommended for Physics majors. Math at the level of MATH 1620 or higher is expected, at least concurrently. Physics at the level of PHYS 1600 or higher is expected.

PHYS 2100 INTERMEDIATE MECHANICS (3) LEC. 3. Pr., PHYS 1617 or PHYS 1610.Principles and applications of Newtonian mechanics, noninertial reference frames, harmonic motion, central forces, rigid bodies, introduction to Lagrangian and Hamiltonian mechanics.

PHYS 2200 INTRODUCTORY QUANTUM PHYSICS AND RELATIVITY (3) LEC. 3. Pr., PHYS 1617 or PHYS 1610.Observational foundations of quantum physics, relativity and developments of several branches of physics up to their present frontiers.

PHYS 2300 PHYSICS LABORATORY SKILLS (2) LAB. 6. Pr., PHYS 1617 or PHYS 1610.The measurement process and its unavoidable uncertainties; standard laboratory instruments; data analysis techniques and tools.

PHYS 3100 INTERMEDIATE ELECTRICITY AND MAGNETISM (3) LEC. 3. Pr., (PHYS 1617 or PHYS 1610) and (MATH 2630 or MATH 2730).Electrostatics, Magnetostatics, Laplace's equation, boundary-value problems, multipole expansions, dielectric and magnetic materials. Faraday's law, AC circuits, and Maxwell's equations.

PHYS 3200 STATISTICAL THERMODYNAMICS (3) LEC. 3. Pr., PHYS 2200.The basic laws of thermodynamics, kinetic theory, and statistical mechanics including entropy, the partition function, free energy, and the quantum statistics of Fermions and Bosons.

PHYS 3500 PHYSICS OF THE WORLD AROUND US (3) LEC. 3. Interdisciplinary topic e.g. Biophysics, Astrophysics, Physics of Weather, Physics of Music, or Environmental Physics. Course may be repeated for a maximum of 12 credit hours.

PHYS 3501 PHYSICS OF THE WORLD AROUND US LABORATORY (1) LAB. 3. Laboratory course required for certain topics for PHYS 3500. One 3 hour session per week.

PHYS 4100 FUNDAMENTALS OF QUANTUM MECHANICS (3) LEC. 3. Pr., PHYS 2200 and MATH 2650.Schrodinger equation, stationary and time-dependent solutions, spin and the exclusion principle, perturbation theory, scattering and resonances, the interpretation of quantum mechanics.

PHYS 4200 FUNDAMENTAL EXPERIMENTS IN PHYSICS (2) LAB. 6. Pr., PHYS 2300.Experiments that demonstrate the fundamental ideas and facts of physics. Data will be collected, analyzed, interpreted and reported in comprehensive lab reports.

PHYS 4900 DIRECTED STUDIES (1-5) IND. SU. Student will investigate a topic of interest under the direction of a faculty member. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

PHYS 4930 DIRECTED STUDIES IN PHYSICS (1-5) IND. Student will study a topic of interest under the direction of a faculty member. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

PHYS 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College.Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PHYS 4980 UNDERGRADUATE RESEARCH IN PHYSICS (1-5) IND. Student will work under the direction of a faculty member on a problem of mutual interest. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

PHYS 4997 HONORS THESIS (1-6) IND. Pr., Honors College.Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PHYS 5100 APPLICATIONS OF QUANTUM MECHANICS (3) LEC. 3. Pr., PHYS 4100. Quantum mechanics applied to atomic physics, solid state physics, nuclear physics, particle physics, electrodynamics, and cosmology.

PHYS 5500 FUNDAMENTALS OF PHYSICS (3) LEC. 3. A subject such as Wave Mechanics, Mathematical Physics, Nonlinear Dynamics, Optics, Nuclear Physics, Elementary Particles, Relativity, or Electrodynamics. Course may be repeated for a maximum of 9 credit hours.

PHYS 5600 FRONTIERS OF PHYSICS (3) LEC. 3. A subject from the research areas in the Department such as Solid State, Atomic, Plasma, Space, or Computational Physics will be selected by the lecturer. Course may be repeated for a maximum of 9 credit hours.

PHYS 5610 INTRODUCTION TO SOLID STATE PHYSICS (3) LEC. 3. Lattice vibrations, band description of electronic states in metals, semiconductors and insulators, and magnetic, superconducting and defect properties of solids.

PHYS 5620 SURVEY OF PLASMA PHYSICS (3) LEC. 3. Pr., PHYS 3100. Single particle motions: fluid description of a plasma; plasma waves and oscillations; kinetic description, diffusion, and resistivity; non-linear effects.

PHYS 6100 APPLICATIONS OF QUANTUM MECHANICS (3) LEC. 3. Quantum mechanics applied to atomic physics, solid state physics, nuclear physics, particle physics, electrodynamics, and cosmology.

PHYS 6500 FUNDAMENTALS OF PHYSICS (3) LEC. 3. A subject such as Wave Mechanics, Mathematical Physics, Nonlinear Dynamics, Optics, Nuclear Physics, Elementary Particles, Relativity, or Electrodynamics. Course may be repeated for a maximum of 9 credit hours.

PHYS 6600 FRONTIERS OF PHYSICS (3) LEC. 3. A subject from the research areas in the Department such as Solid State, Atomic, Plasma, Space, or Computational Physics will be selected by the lecturer. Course may be repeated for a maximum of 9 credit hours.

PHYS 6610 INTRODUCTION TO SOLID STATE PHYSICS (3) LEC. 3. Lattice vibrations, band description of electronic states in metals, semiconductors and insulators, and magnetic, superconducting and defect properties of solids.

PHYS 6620 SURVEY OF PLASMA PHYSICS (3) LEC. 3. Single particle motions: fluid description of a plasma; plasma waves and oscillations; kinetic description, diffusion, and resistivity; non-linear effects.

PHYS 7100 CLASSICAL MECHANICS (3) LEC. 3. Lagrangian and Hamiltonian formulations of mechanics, canonical transforms. Hamilton-Jacobi theories, action angle variables, rigid rotators, normal modes, and mechanics of continuous media.

PHYS 7200 ELECTRICITY AND MAGNETISM I (3) LEC. 3. Electrostatics, special function expansions, magnetostatics, linear media and Maxwell's equations.

PHYS 7250 ELECTRICITY AND MAGNETISM II (3) LEC. 3. Time dependent Maxwell theory, wave propagation and dispersion, diffraction, scattering, radiation, relativistic covariance and applications.

PHYS 7300 QUANTUM MECHANICS I (3) LEC. 3. Schrodinger wave equation, discrete and continuous spectra, matrix formulation, perturbation theory.

PHYS 7350 QUANTUM MECHANICS II (3) LEC. 3. Time-dependent approximation methods, relativistic wave equations, and second quantization.

PHYS 7400 STATISTICAL PHYSICS (3) LEC. 3. Thermodynamic quantities, equilibrium ensembles for classical and quantum systems, fluctuations, phase transitions and critical phenomena.

PHYS 7520 NONLINEAR DYNAMICS (3) LEC. 3. Dynamical systems, maps, flows, fixed points and neighborhoods, chaos, fractals and fractal dimensions. Lyapunov exponents, strange attractors, dissipative and Hamiltonian systems, controlling chaos.

PHYS 7540 NON-EQUILIBRIUM STATISTICAL MECHANICS (3) LEC. 3. Introduces the fundamental concepts of non-equilibrium statistical mechanics, develops basic transport theories, and simulates statistical properties with Monte-Carlo and molecular dynamic methods.

PHYS 7900 DIRECTED STUDIES (1-5) IND. SU. Student will work with a faculty member to study a topic of interest. Course may be repeated for a maximum of 6 credit hours.

PHYS 7930 DIRECTED STUDIES (1-5) IND. Student will work with a faculty member to study a topic of interest. Course may be repeated for a maximum of 6 credit hours.

PHYS 7950 PHYSICS COLLOQUIUM (1) SEM. SU. Offers a series of talks presented by invited speakers on broad fields of physics. Check with graduate advisor for credit allowed. Course may be repeated for a maximum of 6 credit hours.

PHYS 7970 SPECIAL TOPICS IN PHYSICS (1-5) SEM. Seminar or lecture series in a rapidly advancing specialty of physics. Course may be repeated for a maximum of 6 credit hours.

PHYS 7990 RESEARCH AND THESIS (1-10) MST. May be repeated as often as is appropriate. Course may be repeated with change in topics.

PHYS 8100 RELATIVISTIC QUANTUM MECHANICS (3) LEC. 3. Dirac equation, 1D barrier scattering, 3D central potentials, S-matrix theory, Feynman diagrams, quantum electrodynamics, renormalization, tree and loop level problems.

PHYS 8200 INTRODUCTION TO ATOMIC PHYSICS (3) LEC. 3. Hydrogen atom, Hartree-Fock theory, radiative transitions, photoionization, autoionization, electron-atom scattering.

PHYS 8600 PLASMA PHYSICS (3) LEC. 3. A detailed study of plasma physics including particle orbit theory, magnetohydrodynamics, plasma waves and transport phenomena.

PHYS 8700 SOLID STATE PHYSICS (3) LEC. 3. Atomic and electronic structures of solids and the associated electrical, optical and transport properties.

PHYS 8900 DIRECTED STUDIES (1-5) IND. SU. Students will work with a faculty member to study a topic of interest. Course may be repeated for a maximum of 10 credit hours.

PHYS 8930 DIRECTED STUDIES IN ADVANCED PHYSICS (1-5) IND. Student will work with a faculty member to study a topic of interest. Course may be repeated for a maximum of 10 credit hours.

PHYS 8970 SPECIAL TOPICS IN ADVANCED PHYSICS (1-5) LEC. Topic at the forefront of physics research will be chosen by the lecturer. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

PHYS 8990 RESEARCH AND DISSERTATION (1-10) DSR. May be repeated as often as is appropriate. Course may be repeated with change in topics.

Plant Pathology - PLPA

Courses

PLPA 2000 PESTS, PATHOGENS, PARASITES, AND PEOPLE (3) LEC. 3. Past and present problems of pests and disease involving humans and the food chain.

PLPA 3000/3003/3004 GENERAL PLANT PATHOLOGY (4) LEC. 3. LAB. 2. Pr., BIOL 1030. Survey of plant diseases common in Alabama, including symptom recognition, pathogen biology and management of plant diseases. Course credit will not be given for both PLPA 3000 and PLPA 3003/3004.

PLPA 4960 SPECIAL PROBLEMS IN PLANT PATHOLOGY (1-3) IND. Departmental approval. Supervised work on a project in plant pathology. Areas of study are: A. Mycology; B. Nematology; C. Virology; D. Bacteriology; E. Extension and Clinic Experience; F. Physiological and Molecular Approaches. Course may be repeated for a maximum of 3 credit hours.

PLPA 4980 UNDERGRADUATE RESEARCH (2-4) IND. Directed research in the area of specialty within the department. Departmental approval.

PLPA 4997 HONORS THESIS (1-3) IND. Pr., Honors College. Assigned readings on topics pertinent to plant pathology or individual student endeavor consisting of directed research and writing of honor's thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PLPA 5050 PLANT DISEASE DIAGNOSIS (3) LEC. 1. LAB. 3. Pr., PLPA 3000. Approaches, techniques, and practical experience in diagnosis of plant diseases. Credit will not be given for both PLPA 5050 and PLPA 6050. Summer.

PLPA 5060 PLANT DISEASE MANAGEMENT (3) LEC. 3. Pr., PLPA 3000. Aspects of plant disease management including cultural practices, plant resistance, biological and chemical control, and disease forecasting. Spring.

PLPA 5200/5203 INTRODUCTORY MYCOLOGY (4) LEC. 3. LAB. 2. Pr., BIOL 1030.A systematic survey of the fungi with emphasis on Morphology. Credit will not be given for both PLPA 5200 and PLPA 6200. Fall.

PLPA 5400 PLANT VIROLOGY (3) LEC. 3. Pr., PLPA 3000.Introduction to plant viruses and the diseases they cause; virus particle structure and replication strategies; disease identification by symptoms and detection of pathogen; transmission, ecology, epidemiology and control. Spring. Departmental approval.

PLPA 5500/5503 PLANT NEMATOLOGY (4) LEC. 2. LAB. 4. Pr., BIOL 1030.Presentation of nematodes in relation to plant diseases, identification of plant nematodes; nature of pathogenicity; principles and practices of management; recent advances in phytonematology. May count either PLPA 5500 or PLPA 6500. Departmental approval.

PLPA 5920 INTERNSHIP (3) IND. 3. SU. Practical professional experience under the supervision of internship faculty and a representative of a state, federal, or private agency. Departmental approval.

PLPA 6050 PLANT DISEASE DIAGNOSIS (3) LEC. 1. LAB. 3. Pr., PLPA 3000.Experience with plant disease diagnosis procedures and the diagnosis of many common plant diseases. Summer.

PLPA 6060 PLANT DISEASE MANAGEMENT (3) LEC. 3. Pr., PLPA 3000.Aspects of plant disease management including cultural practices, plant resistance, biological and chemical control, and disease forecasting. Spring.

PLPA 6200/6206 INTRODUCTORY MYCOLOGY (4) LEC. 3. LAB. 2. Pr., BIOL 1030.A systematic survey of the fungi with emphasis on morphology. Credit will not be given for both PLPA 5200 and PLPA 6200. Fall.

PLPA 6400 PLANT VIROLOGY (3) LEC. 3. Pr., PLPA 3000.Introduction to plant viruses and the diseases they cause; virus particle structure and replication strategies; disease identification by symptoms and detection of pathogen; transmission, ecology, epidemiology and control. Departmental approval.

PLPA 6500/6506 PLANT NEMATOLOGY (4) LEC. 2. LAB. 4. Pr., BIOL 1030.Presentation of nematodes in relation to plant diseases, identification of plant nematodes; nature of pathogenicity; principles and practices of management; recent advances in phytonematology. May count either PLPA 5500 or PLPA 6500. Departmental approval.

PLPA 6920 INTERNSHIP (3) IND. 3. SU. Practical professional experience under the supervision of internship faculty and a representative of a state, federal, or private agency. Departmental approval.

PLPA 7080 FIELD SURVEY OF PLANT PATHOLOGY (3) LEC. 1. LAB. 6. Pr., PLPA 3000.Practical aspects of plant diseases under field conditions, on-site visits via field trips; discussion of experimental design for field research. Summer.

PLPA 7300 PLANT-BACTERIAL INTERACTIONS (4) LEC. 3. LAB. 2. Pr., BIOL 1030.Biochemical and molecular basis of plant-bacterial interactions, including colonization, pathogenesis, symbiotic and associative nitrogen fixation, and transformation. Fall. Departmental approval.

PLPA 7820 RESEARCH PROPOSAL WRITING (4) LEC. 3. Experience in all aspects of writing and reviewing competitive research proposals through a workshop-format culminating in each student writing a proposal on research topics of their choosing. Fall.

PLPA 7860 PLANT DISEASE EPIDEMIOLOGY (3) LEC. 3. Pr., PLPA 3000.Aspects of plant disease epidemiology including disease assessment and temporal progress, pathogen spread, and yield loss determination. Spring.

PLPA 7861 PLANT DISEASE EPIDEMIOLOGY LABORATORY (2) LAB. 4. Coreq., PLPA 7860Quantitative aspects of plant disease epidemiology including spatial and temporal modeling, and disease system simulation.

PLPA 7900 DIRECTED STUDIES IN PLANT PATHOLOGY (1-5) LEC. SU. Discussion groups on specific topics, assigned reading on laboratory problems or field research. Course may be repeated for a maximum of 5 credit hours.

PLPA 7910 TEACHING PRACTICUM (1) LAB. 2. SU. Departmental approval. The teaching practicum will address the practical and heretical issues of laboratory learning and facilitating the skills of pedagogy. Course may be repeated for a maximum of 3 credit hours.

PLPA 7930 JOURNAL REVIEW FOR ENTOMOLOGY AND PLANT PATHOLOGY (1) LEC. 1. Pr., ENTM 3040 and ENTM 4020 or PLPA 3000.Discussion of recent scientific publications on basic aspects of research in entomology and plant pathology. Course may be repeated for a maximum of 2 credit hours.

PLPA 7950 SEMINAR IN PLANT PATHOLOGY (1) SEM. 1. SU. Seminar presentations on current departmental research and current issues in plant pathology and related disciplines. Fall, Spring. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

PLPA 7960 SPECIAL PROBLEMS IN PLANT PATHOLOGY (1-5) IND. Departmental approval. Credit to be arranged. Specialized project or research on a specific topic in plant pathology to be conducted under faculty supervision. Course may be repeated for a maximum of 5 credit hours.

PLPA 7990 RESEARCH AND THESIS (1-10) MST. Research and thesis on problems in plant pathology. Departmental approval. Course may be repeated with change in topics.

PLPA 8880 PHYSIOLOGICAL AND MOLECULAR PLANT PATHOLOGY (3) LEC. 2. LAB. 2. Pr., PLPA 7300 and (PLPA 6200 or PLPA 6206) and PLPA 6400. Comprehensive coverage of physiology and molecular biology of plant-pathogen interactions. Spring. Departmental approval.

PLPA 8900 DIRECTED STUDIES IN PLANT PATHOLOGY (1-5) LEC. SU. Discussion groups on specific topics, assigned reading on laboratory problems or field research. Course may be repeated for a maximum of 5 credit hours.

PLPA 8910 TEACHING PRACTICUM (1-3) LAB. 2. SU. Departmental approval. Practical and theoretical issues of laboratory learning, and pedagogical facilitation. Required of all PhD students. Course may be repeated for a maximum of 3 credit hours.

PLPA 8930 JOURNAL REVIEW FOR ENTOMOLOGY AND PLANT PATHOLOGY (1) LEC. 1. Pr., ENTM 3040 and ENTM 4020 or PLPA 3000. Discussion of recent scientific publications on basic aspects of research in entomology and plant pathology. Course may be repeated for a maximum of 3 credit hours.

PLPA 8950 SEMINAR (1) SEM. 1. SU. Presentations and discussion of scientific literature or dissertation research findings. Required for all Ph.D. candidates. Course may be repeated for a maximum of 2 credit hours.

PLPA 8960 SPECIAL PROBLEMS IN PLANT PATHOLOGY (1-5) IND. Departmental approval. Credit to be arranged. Specialized project or research on a specific topic in plant pathology to be conducted under faculty supervision. Course may be repeated for a maximum of 5 credit hours.

PLPA 8990 RESEARCH AND DISSERTATION (1-10) DSR. Research and dissertation on problems in plant pathology. Departmental approval. Course may be repeated with change in topics.

Political Science - POLI

Courses

POLI 1020 POLITICAL ECONOMY (3) LEC. 2. AAB. 1. Social Science II Core. The two-way interaction between politics and the economy with special attention to contemporary issues of public policy.

POLI 1021 POLITICAL ECONOMY RECITATION (0) LEC. 2. Coreq., POLI 1020. Small group activities for POLI 1020.

POLI 1027 HONORS POLITICAL ECONOMY (3) LEC. 3. Pr., Honors College. Social Science II Core. The two-way interaction between politics and the economy with special attention to contemporary issues of public policy.

POLI 1050 GLOBAL POLITICS AND ISSUES (3) LEC. 3. An examination of current trends toward globalization in institutional development to address world problems.

POLI 1057 HONORS GLOBAL POLITICS AND ISSUES (3) LEC. 3. Pr., Honors College. An examination of current trends toward globalization in institutional development to address world problems.

POLI 1090/1093/1094 AMERICAN GOVERNMENT IN MULTICULTURAL WORLD (3) LEC. 3. American political institutions, processes and behavior in comparative context, with special attention to the ways in which cultural and social diversity in the U.S. has impacted its politics. Social Science II Core.

POLI 1097 HONORS AMERICAN GOVERNMENT IN MULTICULTURAL WORLD (3) LEC. 3. Pr., Honors College. American Political Institutions, processes and behavior in comparative context, with special attention to the ways in which cultural and social diversity in the U.S. has impacted its politics. Social Science II Core.

POLI 2100 STATE AND LOCAL GOVERNMENT (3) LEC. 3. The organization and operation of American state and local governments, including their relationship to the U.S. federal system and their role in public policy issues.

POLI 3000 POLITICAL SCIENCE RESEARCH METHODS I (3) LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Introduction to the basic concepts and methodology used in contemporary political analysis.

POLI 3010 POLITICAL SCIENCE RESEARCH METHODS II (3) LEC. 3. Pr., POLI 3000 and POLI 1090 or POLI 1093 or POLI 1097. Introduction to empirical research methods in political science with attention to data collection, retrieval, transformation and analysis.

POLI 3020 INTRODUCTION TO POLITICAL THEORY (3) LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Selected major themes in political thought from ancient to modern times.

POLI 3030 AFRICAN-AMERICAN POLITICAL THOUGHT (3) LEC. 3. African-American political thought along with a theoretical framework that is reflective of the Black experience.

POLI 3090 INTRODUCTION TO INTERNATIONAL RELATIONS (3) LEC. 3. International relations, including a consideration of the bases of national power and the rudiments of international politics.

POLI 3100 INTRODUCTION TO WORLD AFFAIRS (3) LEC. 3. Contemporary international politics that evaluates foreign policy objectives and strategies of seven major countries and how their stability as sovereign states are affected.

POLI 3120 INTRODUCTION TO COMPARATIVE POLITICS (3) LEC. 3. Methods of classifying governments by institutional and developmental characteristics.

POLI 3130 INTERNATIONAL LAW AND ORGANIZATIONS (3) LEC. 3. An examination of international law and international organizations in the world system.

POLI 3140 AMERICAN FOREIGN POLICY (3) LEC. 3. Analysis of the decision making process of American foreign policy and/or of selected current issues of American foreign policy.

POLI 3150 AMERICAN POLITICAL THOUGHT (3) LEC. 3. The principal American political philosophers and philosophies and their influence on political institutions.

POLI 3160 NATIONAL SECURITY POLICY (3) LEC. 3. Introduction to national security aspects of United States foreign policy.

POLI 3170 SOVIET AND POST-SOVIET FOREIGN POLICIES (3) LEC. 3. An analysis of Soviet foreign policy from 1917-1991, and an introduction to foreign policies of Russia and other post-Soviet successor states.

POLI 3180 LATIN AMERICA AND THE UNITED STATES (3) LEC. 3. An analysis of Latin American-United States relations in their political, social and economic aspects.

POLI 3190 INTERNATIONAL RELATIONS OF THE MIDDLE EAST (3) LEC. 3. A survey of contemporary issues in international relations, focusing on the Middle East.

POLI 3240 ADMINISTRATION OF JUSTICE (3) LEC. 3. Components of the American legal system responsible for administration of public justice.

POLI 3250 INTRODUCTION TO PUBLIC ADMINISTRATION (3) LEC. 3. Pr., P/C, POLI 1090 or P/C, POLI 1093 or P/C, POLI 1097. Administration in the public sector with particular emphasis on public administration as it exists in modern American Government.

POLI 3260 ORGANIZATION THEORY (3) LEC. 3. Pr., POLI 3250 and POLI 1090 or POLI 1093 or POLI 1097. Structure and function of governmental organizations with an emphasis on theories of administrative hierarchies and evaluation of bureaucracy.

POLI 3270 POLICY PROCESS (3) LEC. 3. The formulation and implementation of public policy; the roles of the major governmental institutions in policy making.

POLI 3290 THE AMERICAN PRESIDENCY (3) LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Examines political styles and personalities of recent presidents and presidential decision-making.

POLI 3300 LAW AND SOCIETY (3) LEC. 3. Introduction to how the law mediates some of the basic conflicts in society.

POLI 3310 THE LEGISLATIVE PROCESS (3) LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Principles, procedures and problems of lawmaking in the U.S.; special attention to Congress and the state legislatures.

POLI 3320 JUDICIAL PROCESS (3) LEC. 3. A basic understanding of the structure and function of courts and the role of judges in all societies, but with a special focus on the American variation.

POLI 3330 ADMINISTRATIVE RESPONSIBILITY (3) LEC. 3. Pr., POLI 3250. Roles and functions of public administration in a democratic society. Emphasis on bureaucratic ethics.

POLI 3340 INTRODUCTION TO CONFLICT RESOLUTION (3) LEC. 3. Examines various methods of conflict resolution at various levels from the interpersonal to international.

POLI 3350 CONTROVERSIES IN CONSTITUTIONAL LAW (3) LEC. 3. This course examines the origins and influence of controversial Supreme Court decisions in such areas as religion, free speech, privacy, abortion, and criminal justice.

POLI 3360 FEDERAL JURISDICTION (3) LEC. 3. An introduction to the federal court system and Federal Jurisdiction under Article III.

POLI 3370 FEDERAL INDIAN LAW (3) LEC. 3. An introduction to the federal laws governing and regulating the relationship between tribal nations, on the one hand and the states and federal governments, on the other.

POLI 3380 EVIDENCE AND LEGAL REASONING (3) LEC. 3. An introduction to the rules governing the presentation of evidence at trial.

POLI 3390 RELIGION AND POLITICS (3) LEC. 3. Interaction of governmental institutions and religion.

POLI 3400 POLITICAL PARTIES AND INTEREST GROUPS (3) LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. The nature, organization and operation of political parties in the United States; the suffrage; nominating and electoral processes; importance and nature of interest groups.

POLI 3410 POLITICAL PARTICIPATION (3) LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Political participation in the traditional and unconventional forms and the developing trends in citizen participation in recent years.

POLI 3420 POLITICS AND THE MEDIA (3) LEC. 3. Influences of the media on political action, the electoral process and popular concepts of political institutions, "use" of the media and its regulation by government.

POLI 3430 JUSTICE AND SOCIETY (3) LEC. 3. Historical overview of issues affecting legal policy.

POLI 3510 THE EUROPEAN UNION (3) LEC. 3. Analysis of the complex mixture of historical, economic, and cultural phenomena that comprise the European Union.

POLI 3520 COMPARATIVE POLITICS OF THE MIDDLE EAST (3) LEC. 3. Domestic politics in the states of the Middle East.

POLI 3530 SOVIET AND POST-SOVIET POLITICS (3) LEC. 3. Survey and analysis of political institutions and domestic policies in the Soviet Union 1917-1991 and in post-Soviet successor states.

POLI 3540 EAST EUROPEAN POLITICS (3) LEC. 3. Survey and analysis of evolving political institutions and policies in Eastern and Central Europe under Communism and in the post-Communism period.

POLI 3550 GOVERNMENT AND POLITICS OF LATIN AMERICA (3) LEC. 3. Political environment, institutions and processes of Latin America emphasizing factors that influence the degree of democracy and authoritarianism, stability and instability, and political development.

POLI 3560 THE ARAB SPRING (3) LEC. 3. An examination of the Arab Uprising that began in Tunisia in 2010 and spread to the rest of the region.

POLI 3610 ASIAN POLITICS (3) LEC. 3. The politics of the leading nations in East Asia with major attention being devoted to China and Japan.

POLI 3710 ISSUES IN AMERICAN POLITICS (3) LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in American Politics. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

POLI 3720 ISSUES IN COMPARATIVE POLITICS (3) LEC. 3. Topics in Comparative Politics. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

POLI 3730 ISSUES IN INTERNATIONAL RELATIONS (3) LEC. 3. Topics in International Relations. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

POLI 3740 ISSUES IN POLITICAL THOUGHT (3) LEC. 3. Topics in Political Thought. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

POLI 3750 ISSUES IN PUBLIC ADMINISTRATION (3) LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in Public Administration. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

POLI 3760 ISSUES IN PUBLIC POLICY (3) LEC. 3. Topics in Public Policy. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

POLI 3770 ISSUES IN PUBLIC LAW AND CONFLICT RESOLUTION (3) LEC. 3. Topics in Public Law & Conflict Resolution. Focus will vary according to the instructor. Course may be repeated for a maximum of 6 credit hours.

POLI 3980 UNDERGRADUATE RESEARCH (1-3) LAB. Pr., POLI 3000. Supplementary learning concurrent with actual experience with Political Science Research. May be repeated twice, with change of topic. Course may be repeated for a maximum of 6 credit hours.

POLI 4010 CONSTITUTIONAL LAW: GOVERNMENT POWERS (3) LEC. 3. Constitutional law cases dealing with limited powers, separation of powers and federalism.

POLI 4020 CONSTITUTIONAL LAW: CIVIL LIBERTIES (3) LEC. 3. Constitutional law cases dealing with First Amendment freedoms.

POLI 4030 CONSTITUTIONAL LAW: CIVIL RIGHTS (3) LEC. 3. Supreme Court opinions defining voting rights, gender discrimination, race discrimination, age discrimination, affirmative action and the right to privacy.

POLI 4040 CONSTITUTIONAL LAW: CRIMINAL JUSTICE (3) LEC. 3. Supreme Court rulings of Fourth, Fifth, Sixth, and Eighth Amendments to the U.S. Constitution.

POLI 4050 AMERICAN LOCAL GOVERNMENT (3) LEC. 3. Pr., POLI 2100. The structure of local government, the roles and incentives of key elected and appointed officials, and the policy issues faced by those officials.

POLI 4090 URBAN ADMINISTRATION (3) LEC. 3. Pr., POLI 3250. Different aspects of urban administration such as decision making, political environment, budgeting, revenue systems and personnel administration.

POLI 4130 POLITICS OF THE ADMINISTRATIVE PROCESS (3) LEC. 3. How public agencies and their employees at all levels of government survive and sometimes prosper within an intensely political environment.

POLI 4140 PUBLIC FINANCE (3) LEC. 3. Pr., POLI 3250 and POLI 1090 or POLI 1093 or POLI 1097. Theory and practice of public finance with an emphasis on applications in state and local government.

POLI 4160 PUBLIC PERSONNEL ADMINISTRATION (3) LEC. 3. Pr., POLI 3250 and POLI 1090 or POLI 1093 or POLI 1097. Responsibilities, challenges, and opportunities that confront modern public administration in the management of human resources.

POLI 4220 UNITED STATES POLITICAL ECONOMY (3) LEC. 3. Social, economic and political factors that affect America's national competitiveness and what they portend for political life in the United States.

POLI 4340 CONTEMPORARY POLITICAL THEORY (3) LEC. 3. Pr., POLI 3020. Survey of late 20th and early 21st Century political philosophy, including neoclassicist, postmodernist, communitarian, and critical theories.

POLI 4700 POLITICS OF INTERNATIONAL ECONOMIC RELATIONS (3) LEC. 3. Political issues involved in the economic relationships among nation states.

POLI 4920 INTERNSHIP (1-6) AAB/INT. SU. Internship in selected areas of political science. Course may be repeated for a maximum of 6 credit hours.

POLI 4930 DIRECTED STUDIES (1-3) AAB/IND. Pr., POLI 1090 or POLI 1093 or POLI 1097. Course may be repeated with change in topics.

POLI 4960 SPECIAL PROBLEMS (1-3) IND. Directed readings in Political Science: 1) American Politics; 2) Comparative Politics; 3) International Relations; 4) Political Theory; 5) Public Administration; Public Policy; 7) Public Law; 8) Methodology. Course may be repeated with change in topics.

POLI 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. POLI 1090 or POLI 1093 or POLI 1097. Directed readings: 1) American Politics; 2) Comparative Politics; 3) International Relations; 4) Political Theory; 5) Public Administration; 6) Public Policy; 7) Public Law; 8) Methodology. Course may be repeated with change in topics.

POLI 4997 HONORS THESIS (1-3) IND. Pr., Honors College. POLI 1090 or POLI 1093 or POLI 1097. Course may be repeated for a maximum of 6 credit hours.

POLI 5150 INTERGOVERNMENTAL RELATIONS AND FEDERALISM (3) LEC. 3. Provides a mid-level introduction to American federalism and the intergovernmental system, including theory, historical developments, major themes and emerging issues. Credit will not be given for both POLI 5150 and POLI 6150.

POLI 5170 ELECTION LAW (3) LEC. 3. Legal issues surrounding the election process within a democratic political system. Credit will not be given for both POLI 5170 and POLI 6170.

POLI 5180 ADMINISTRATIVE LAW (3) LEC. 3. General nature of administrative law; types of administrative action and enforcement; analysis of rule-making and adjudication; administrative due process; judicial review. Credit will not be given for both POLI 5180 and POLI 6180.

POLI 5210 VOTING BEHAVIOR AND REPRESENTATION (3) LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. The causes of voting and vote choice and their consequences for the behavior of representatives. Credit will not be given for both POLI 5210 and POLI 6210.

POLI 5270 ELECTION ADMINISTRATION (3) LEC. 3. Elections and the shifting relationships among local, state, and federal governments. Credit will not be given for both POLI 5270 and POLI 6270.

POLI 5340 THEORY AND PRACTICE OF MEDIATION (3) LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. Theoretical and comparative perspective on conflict resolution with emphasis on the role of mediation in various societies. Credit will not be given for both POLI 5340 and POLI 6340.

POLI 5370 NONPROFIT MANAGEMENT (3) LEC. 3. A comprehensive overview of the complex and diverse non-profit sector in the United States. Includes theory and practice of governance and key management functions. Credit will not be given for both POLI 5370 and POLI 6370.

POLI 5380 PUBLIC-PRIVATE MANAGEMENT (3) LEC. 3. Theory and practice of the roles of the public and private sectors in the provision, production and delivery of traditional public services. Credit will not be given for both POLI 5380 and POLI 6380.

POLI 5410 SOUTHERN POLITICS (3) LEC. 3. Introduction to the politics and government of the Southern region of the United States. Credit will not be given for both POLI 5410 and POLI 6410.

POLI 5510 ISSUES IN AMERICAN POLITICS (1-3) LEC. Pr., POLI 1090 or POLI 1093 or POLI 1097. Topics in American Politics. Focus will vary according to the instructor. Credit will not be given for both POLI 5510 and 6510. Course may be repeated for a maximum of 6 credit hours.

POLI 5520 ISSUES IN COMPARATIVE POLITICS (1-3) LEC. Topics in Comparative Politics. Focus will vary according to the instructor. Credit will not be given for both POLI 5520 and 6520. Course may be repeated for a maximum of 6 credit hours.

POLI 5530 ISSUES IN INTERNATIONAL RELATIONS (1-3) AAB/LEC. Topics in International Relations. Focus will vary according to the instructor. Credit will not be given for both POLI 5530 and 6530. Course may be repeated for a maximum of 6 credit hours.

POLI 5540 ISSUES IN POLITICAL THOUGHT (1-3) LEC. Topics in Political Thought. Focus will vary according to the instructor. Credit will not be given for both POLI 5540 and 6540. Course may be repeated for a maximum of 6 credit hours.

POLI 5550 ISSUES IN PUBLIC ADMINISTRATION (1-3) LEC. Topics in Public Administration. Focus will vary according to the instructor. Credit will not be given for both POLI 5550 and 6550. Course may be repeated for a maximum of 6 credit hours.

POLI 5560 ISSUES IN PUBLIC POLICY (1-3) LEC. Topics in Public Policy. Focus will vary according to the instructor. Credit will not be given for both POLI 5560 and 6560. Course may be repeated for a maximum of 6 credit hours.

POLI 5570 ISSUES IN PUBLIC LAW AND CONFLICT RESOLUTION (1-3) LEC. Topics in Public Law & Conflict Resolution. Focus will vary according to the instructor. Credit will not be given for both POLI 5570 and POLI 6570. Course may be repeated for a maximum of 6 credit hours.

POLI 5610 WOMEN IN POLITICS (3) LEC. 3. An examination of the political role of women in American society. Credit will not be given for both POLI 5610 and POLI 6610.

POLI 5620 AFRICAN AMERICAN POLITICS (3) LEC. 3. Political values, theories, problems, issues and behavior relating to African-Americans in the United States. Credit will not be given for both POLI 5620 and POLI 6620.

POLI 5710 PERSIAN GULF POLITICS (3) LEC. 3. Pr., POLI 1090 or POLI 1093 or POLI 1097. An examination of the politics of the Persian Gulf. May count either POLI 5710 or POLI 6710.

POLI 6150 INTERGOVERNMENTAL RELATIONS AND FEDERALISM (3) LEC. 3. Provides a mid-level introduction to American federalism and the intergovernmental system, including theory, historical developments, major themes and emerging issues. Credit will not be given for both POLI 5150 and POLI 6150.

POLI 6170 ELECTION LAW (3) LEC. 3. Legal issues surrounding the election process within a democratic political system. Credit will not be given for both POLI 5170 and POLI 6170.

POLI 6180 ADMINISTRATIVE LAW (3) LEC. 3. General nature of administrative law; types of administrative action and enforcement; analysis of rule-making and adjudication; administrative due process; judicial review. Credit will not be given for both POLI 5180 and POLI 6180.

POLI 6210 VOTING BEHAVIOR AND REPRESENTATION (3) LEC. 3. The causes of voting and vote choice and their consequences for the behavior of representatives. Credit will not be given for both POLI 6210 and POLI 5210.

POLI 6270 ELECTION ADMINISTRATION (3) LEC. 3. Elections and the shifting relationships among local, state, and federal governments. Credit will not be given for both POLI 5270 and POLI 6270.

POLI 6340 THEORY AND PRACTICE OF MEDIATION (3) LEC. 3. Theoretical and comparative perspective on conflict resolution with emphasis on the role of mediation in various societies. Credit will not be given for both POLI 6340 and POLI 5340.

POLI 6370 NONPROFIT MANAGEMENT (3) LEC. 3. A comprehensive overview of the complex and diverse non-profit sector in the United States. Includes theory and practice of governance and key management functions. Credit will not be given for both POLI 5370 and POLI 6370.

POLI 6380 SEMINAR IN PUBLIC-PRIVATE MANAGEMENT (3) LEC. 3. Theory and practice of the roles of the public and private sectors in the provision, production and delivery of traditional public services. Credit will not be given for both POLI 6380 and POLI 5380.

POLI 6410 SOUTHERN POLITICS (3) LEC. 3. Introduction to the politics and to a lesser extent government of the Southern region of the United States. Credit will not be given for POLI 6410 and POLI 5410.

POLI 6510 ISSUES IN AMERICAN POLITICS (1-3) LEC. Topics in American Politics. Focus will vary according to the instructor. Credit will not be given for both POLI 5510 and 6510. Course may be repeated for a maximum of 6 credit hours.

POLI 6520 ISSUES IN COMPARATIVE POLITICS (1-3) LEC. Topics in Comparative Politics. Focus will vary according to the instructor. Credit will not be given for both POLI 5520 and 6520. Course may be repeated for a maximum of 6 credit hours.

POLI 6530 ISSUES IN INTERNATIONAL RELATIONS (1-3) LEC. Topics in International Relations. Focus will vary according to the instructor. Credit will not be given for both POLI 5530 and 6530. Course may be repeated for a maximum of 6 credit hours.

POLI 6540 ISSUES IN POLITICAL THOUGHT (1-3) LEC. Topics in Political Thought. Focus will vary according to the instructor. Credit will not be given for both POLI 5540 and 6540. Course may be repeated for a maximum of 6 credit hours.

POLI 6550 ISSUES IN PUBLIC ADMINISTRATION (1-3) LEC. Topics in Public Administration. Focus will vary according to the instructor. Credit will not be given for both POLI 5550 and 6550. Course may be repeated for a maximum of 6 credit hours.

POLI 6560 ISSUES IN PUBLIC POLICY (1-3) LEC. Topics in Public Policy. Focus will vary according to the instructor. Credit will not be given for both POLI 5560 and 6560. Course may be repeated for a maximum of 6 credit hours.

POLI 6570 ISSUES IN PUBLIC LAW AND CONFLICT RESOLUTION (1-3) LEC. Topics in Public Law & Conflict Resolution. Focus will vary according to the instructor. Credit will not be given for both POLI 5570 and POLI 6570. Course may be repeated for a maximum of 6 credit hours.

POLI 6610 WOMEN IN POLITICS (3) LEC. 3. A theoretical, historical, social and political examination of the role of women in American society. Credit will not be given for both POLI 6610 and POLI 5610.

POLI 6620 AFRICAN-AMERICAN POLITICS (3) LEC. 3. The political values, structure and behavior of African- Americans in the United States. Emphasis on the theories, problems and issues relating to Black political behavior. Credit will not be given for both POLI 6620 and POLI 5620.

POLI 6710 PERSIAN GULF POLITICS (3) LEC. 3. An examination of the politics of the Persian Gulf. May count either POLI 5710 or POLI 6710.

POLI 7000 RESEARCH METHODS (3) LEC. 3. Statistics and other quantitative techniques for the analysis of policy and for administrative decision making.

POLI 7050 STATE POLITICS (3) LEC. 3. Current and classical research on state government, politics, and policy. Students critique others' research and design their own for submission to a professional journal.

POLI 7130 POLITICS OF THE ADMINISTRATIVE PROCESS (3) LEC. 3. Public agencies and their employees at all levels of government and how they survive and sometimes prosper within an intense political environment. Credit will not be given for both POLI 7130 and POLI 4130.

POLI 7140 PUBLIC BUDGETING (3) LEC. 3. Comprehensive theoretical underpinning for research. Focuses on models associated with descriptive and prescriptive budgeting research.

POLI 7150 PUBLIC PERSONNEL ADMINISTRATION (3) LEC. 3. Personnel policies, processes and politics in American governments. Includes history, theory and practice.

POLI 7160 FINANCIAL ADMINISTRATION (3) LEC. 3. Application of macroeconomic theory to public finance; emphasizes capital budgeting, taxation, user charges, debt administration, cash management and investment for small governments.

POLI 7260 ORGANIZATIONAL THEORY AND ADMINISTRATIVE BEHAVIOR (3) LEC. 3. The structure and functioning of government organizations with an emphasis on applied management and on leadership techniques.

POLI 7330 SEMINAR IN ADMINISTRATIVE LEADERSHIP, RESPONSIBILITY, AND DEMOCRATIC GOVERNMENT (3) SEM. 3. Problems and ethics, democratic theory and leadership as they relate to public administration.

POLI 7350 SEMINAR IN PUBLIC ADMINISTRATION (3) SEM. 3. An introduction to public administration as practiced in the United States.

POLI 7360 SEMINAR IN POLICY AND ADMINISTRATION (3) SEM. 3. Formation, execution and evaluation of public policy and also an in-depth analysis of selected policy areas.

POLI 7520 PROGRAM EVALUATION (3) LEC. 3. Theory and practice of program evaluation in the public sector with attention to program planning, process assessment and impact assessment.

POLI 7630 DIVERSITY IN PUBLIC LIFE (3) LEC. 3. Developing and institutionalizing diversity in complex public organizations as a major part of organizational culture.

POLI 7700 ECONOMIC DEVELOPMENT AND COMPETITION (3) LEC. 3. Politics of economic development at the local, state and national level, especially the infrastructure offered by communities and the types of plans that might attract outside investment.

POLI 7920 MPA INTERNSHIP (3-6) INT. SU. Administrative experience in a governmental agency or participation in an approved governmental research project. Course may be repeated for a maximum of 6 credit hours.

POLI 7930 MPA RESEARCH PROJECT (3-6) IND. SU. Requires the completion and approval of a paper related to a policy or administrative issue or problem. Course may be repeated for a maximum of 6 credit hours.

POLI 7960 SPECIAL PROBLEMS (1-3) IND. Directed readings in political science: 1) American Politics; 2) Comparative Politics; 3) International Relations; 4) Political Theory; 5) Public Administration; 6) Public Policy; 7) Public Law; 8) Methodology. Course may be repeated with change in topics.

POLI 8000 DOCTORAL SEMINAR IN PUBLIC ADMINISTRATION (3) LEC. 3. Explores the nature of public administration as a field of study and how different theoretical perspectives are reflected in current research.

POLI 8010 RESEARCH DESIGN AND ANALYSIS (3) LEC. 3. Development and testing of causal models in political/ social science. Each student will develop a complex research design under the close supervision of the instructor.

POLI 8020 DOCTORAL SEMINAR IN PUBLIC POLICY (3) SEM. 3. Advanced study of the nature of public policy development and implementation.

POLI 8040 DOCTORAL SEMINAR IN PUBLIC FINANCE (3) SEM. 3. The theory and practice of public finance in a comparative perspective.

POLI 8060 DOCTORAL SEMINAR IN PUBLIC POLICY ANALYSIS AND RESEARCH (3) SEM. 3. An examination of advanced policy analysis and research methodology and the relationship between evaluation and quantitative analysis and policy formulation and implementation.

POLI 8070 DOCTORAL SEMINAR IN HUMAN RESOURCE ADMINISTRATION IN THE PUBLIC SECTOR (3) SEM. 3. The major environmental values affecting public personnel administration and the major processes used in public personnel management.

POLI 8110 AMERICAN GOVERNMENT AND PUBLIC POLICY (3) LEC. 3. Survey of the literature on the main institutions and policy processes of American national government; strong emphasis on research design, methodology, and validity.

POLI 8120 QUALITATIVE RESEARCH METHODS (3) SEM. 3. Pr., POLI 8110. In-depth analysis of the use of qualitative methods in Political Science research.

POLI 8130 QUANTITATIVE METHODS (3) LEC. 3. Pr., POLI 8110. In-depth analysis of the use of quantitative methods in Political Science research.

POLI 8260 PUBLIC ORGANIZATIONAL THEORY AND MANAGEMENT (3) SEM. 3. The development and refinement of research on administrative and organizational theory in public management. Credit will not be given for both POLI 7270 and POLI 8260.

POLI 8450 COMPARATIVE POLITICS AND PUBLIC POLICY (3) LEC. 3. Theoretical approaches and important sub-field literatures. Applies insights and approaches to solving practical contemporary problems in public policy.

POLI 8550 INTERNATIONAL RELATIONS AND PUBLIC POLICY (3) LEC. 3. Application of the scholarship in international relations to public policy with a focus on war, defense policy, and conflict management.

POLI 8650 POLITICAL THEORY AND PUBLIC POLICY (3) LEC. 3. A study of political theory in relation to concrete issues of public policy.

POLI 8750 PUBLIC LAW AND PUBLIC POLICY (3) LEC. 3. The role of the courts in public policy-making.

POLI 8970 SPECIAL TOPICS (3) LEC. 3. Directed study of topics of interest. Course may be repeated for a maximum of 9 credit hours.

POLI 8990 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with change in topics.

Polymer & Fiber Engineering - PFEN

Courses

PFEN 2270 INTRODUCTION TO ENGINEERED FIBROUS MATERIALS (4) LEC. 4. Pr., ENGR 1110. The fundamentals of chemistry and engineering applied to fibrous assemblies illustrated using the properties required by end-use. Topics will include biomedical materials, architectural applications cables, ropes, and tethers, composite materials, filtration fabrics, ballistic protection, and health-care products. Credit will not be given for both FBEN 2100 or 2250 and PFEN 2270. Or departmental approval.

PFEN 3100 FUNDAMENTALS OF POLYMERS (3) LEC. 3. Pr., CHEM 2030 or CHEM 2070. Fundamentals of polymers: terminology, synthesis, structure, molecular weight, transitions of state, structure and uses.

PFEN 3400 FUNDAMENTALS OF COLORATION (4) LEC. 3. LAB. 3. Pr., PFEN 3100. Fundamentals of aqueous chemistry, interfacial processes, interactions of chemicals and fibrous/polymeric materials, color perception and coloration of fiber/polymers.

PFEN 3500 STRUCTURE AND PROPERTIES OF POLYMERS AND FIBERS (3) LEC. 3. Pr., PFEN 3100. Exploration of the relationships between the chemical structure, properties and uses of polymers and fibers. Emphasis on the importance of judicious material selection for particular end use applications. Spring.

PFEN 3570 ENGINEERED PROTECTIVE MATERIALS (3) LEC. 3. Pr., ENGR 1110 and MATH 1610 and MATH 1620 and CHEM 1030 and CHEM 1040 and P/C, PHYS 1600. An engineering approach to the design of protective materials and structures based on analyses to counter kinetics, chemical and biological threat hazards to people, animals and valuable objects.

PFEN 4100 POLYMER CHARACTERIZATION (4) LEC. 3. LAB. 3. Pr., PHYS 1610 and CHEM 2080 and PFEN 3500. Study of the major techniques for the physical characterization of polymers. Topics to be covered include molecular weight determination, spectroscopy (light, vibrational, nuclear magnetic resonance, electron spin resonance), X-ray diffraction, microscopy (light, electron), optical methods, and thermal analysis.

PFEN 4200 POLYMERS FROM RENEWABLE RESOURCES (2) LEC. 2. Pr., PFEN 3100. Fundamental aspects of natural, biodegradable polymers, including fibers, adhesives, films and coatings, their synthesis, their structure/properties relationships, and the microbiology of their degradation.

PFEN 4300 ENGINEERED FIBROUS STRUCTURES (4) LEC. 3. LAB. 3. Pr., PFEN 2270. Design and applications of high performance industrial fibrous structures for civil engineering, architecture and construction, filtration, medical, military and defense, pulp and paper industry, safety and protection, sports and recreation, transportation, agriculture and other industries. Fall.

PFEN 4400 MECHANICS OF FLEXIBLE STRUCTURES (3) LEC. 3. Pr., ENGR 2070 and ENGR 2200 and PFEN 2270. Analysis of mechanical behavior and physical properties of flexible structures such as fibers, yarns and fabrics.

PFEN 4500 FIBER REINFORCED MATERIALS (3) LEC. 3. Pr., ENGR 2070 and ENGR 2200 and MATH 2660 and PFEN 2270. Material properties and manufacture of fiber reinforced materials; perform structures such as weaves and braids, analysis, design methodology and applications. Spring.

PFEN 4810 POLYMER AND FIBER ENGINEERING DESIGN I (3) LEC. 3, IND/LEC. 2. Pr., PFEN 3500. Tools and skills needed to conduct an engineering design project. Departmental approval.

PFEN 4820 POLYMER AND FIBER ENGINEERING DESIGN II (3) IND. 3. Undergraduate senior design project, second semester.

PFEN 4970 SPECIAL TOPICS (1-3) AAB. Reading course with varying emphasis to give opportunity for overview in specific areas of engineering and technology. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

PFEN 4997 HONORS THESIS (1-3) IND. Pr., Honors College. Honors Thesis is a project-based course and may be presented in form of a written report or a conference-style presentation. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PFEN 5100 FABRICS FOR PAPER MAKING (3) LEC. 3. Design, analysis and applications of forming fabrics, press felts and dryer fabrics. Departmental approval.

PFEN 5200 POLYMER PROCESSING (4) LEC. 3. LAB. 3. Pr., PFEN 2100. Characteristics and flow properties of polymers; film and fiber extrusion, molding technology, polymer material selection and processing. Credit will not be given for both PFEN 5200 and PFEN 6200.

PFEN 5300 RHEOLOGY (3) LEC. 3. Pr., MATH 2630 and ENGR 2200 or MECH 3030. Covers the most important aspects of elementary modern rheology, including elastic solids, viscoelastic behavior of polymeric systems, composite systems, concentrated solutions and suspension rheology. Departmental approval.

PFEN 5510 POLYMER CHEMISTRY (3) LEC. 3. Pr., CHEM 2030 and ENGR 2050 and (PHYS 1610 or PHYS 1617). Polymer chemistry including polymer synthesis, polymer characterizations, polymer classes, solubility and swelling, and structure/property relationships.

PFEN 6100 FABRICS FOR PAPER MAKING (3) LEC. 3. Design, analysis and applications of forming fabrics, press felts and dryer fabrics. Spring. Departmental approval.

PFEN 6200 POLYMER PROCESSING (4) LEC. 3. LAB. 3. Characteristics and flow properties of polymers; film and fiber extrusion, molding technology, polymer material selection and processing. Credit will not be given for both PFEN 5200 and FPFEN 6200. Departmental approval.

PFEN 6250 ADVANCED ENGINEERING FIBROUS STRUCTURES (3) LEC. 3. Pr., PFEN 4300. Application of advanced technology to the design, development and analysis of high performance industrial textiles. Departmental approval.

PFEN 6510 POLYMER CHEMISTRY (3) LEC. 3. Pr., CHEM 2030 and ENGR 2050 and (PHYS 1610 or PHYS 1617). Polymer chemistry including polymer synthesis, characterizations, classes, solubility and swelling, and structure/property relationships.

PFEN 7210 FABRIC FORMATION AND PROPERTIES (4) LEC. 3. LAB. 3. Pr., PFEN 4300. Advanced manufacturing process of fabric formation; fabric structure, geometry and mechanical properties; recent advances in theoretical and experimental fabric formation systems. Spring. Departmental approval.

PFEN 7310 STRUCTURE AND PROPERTIES OF POLYMERS (4) LEC. 3. LAB. 3. Pr., CHEM 2080. The inter-relationships between chemical structure of a polymer, polymer properties and uses. Plastics, elastomers and fibers-synthesis and property requirements. Departmental approval.

PFEN 7410 ADVANCED COLORATION AND INTERFACIAL PROCESSES (4) LEC. 3. LAB. 3. Pr., PFEN 3400. Colorants and coloration principles for both fibrous and nonfibrous polymers; interfacial processes, such as sorption, adhesion, colloidal processes, surface tension. Departmental approval.

PFEN 7500 MECHANICS OF TEXTILE REINFORCED MATERIALS (3) LEC. 3. Pr., PFEN 4500. Design methods for textile reinforced materials, including micro and macro-mechanics, finite element analysis. Fall.

PFEN 7610 ADVANCED POLYMERS FROM RENEWABLE RESOURCES (2) LEC. 2. Aspects of natural, biodegradable polymers, including fibers, adhesives, films, coatings, their synthesis, their structure/properties relationships, and their microbial degradation. Departmental approval.

PFEN 7620 ADVANCED MECHANICS OF FLEXIBLE STRUCTURES (3) LEC. 3. Pr., PFEN 4400. Recent advances in modeling and analysis of mechanical behavior of flexible structures. Spring.

PFEN 7700 ADVANCED METHODS IN POLYMER CHARACTERIZATION (4) LEC. 4. LAB. 3. Pr., PFEN 6510. Important aspects and methods in polymer characterization. Departmental approval.

PFEN 7770 INTRODUCTION TO CONDUCTING POLYMERS (3) LEC. 3. Pr., PFEN 6510. This "Introduction of Conducting Polymers" course covers the most up to date research and applications in the areas of conducting polymers. This course provides extensive background on: mechanism of electrical conductivity of conducting polymers, classification of conducting polymers, potential applications of conducting polymers, and recent advance of the researches in the fields of conducting polymers. For example, organic solar cells, and organic light emitting diodes.

PFEN 7910 POLYMER RHEOLOGY (3) LEC. 3. Pr., PFEN 6510. Important aspects of elementary modern rheology. Departmental approval.

PFEN 7950 GRADUATE SEMINAR (1) SEM. 1. SU. Presentation of departmental research; practicing written and oral communication skills. Course may be repeated with change in topic. Fall.

PFEN 7960 SPECIAL PROBLEMS AND FIBER ENGINEERING (1-3) IND. Specialized project research with varying emphasis in particular areas of polymers and fibers. Course may be repeated for a maximum of 12 credit hours.

PFEN 7970 SPECIAL TOPICS (3) LEC. 3. Analysis of current issues in the area of polymers and fibers. Course may be repeated for a maximum of 12 credit hours.

PFEN 7980 GRADUATE PROJECT (1-3) IND. In-depth work in a particular project in polymers and fibers. Course may be repeated for a maximum of 12 credit hours.

PFEN 7990 RESEARCH AND THESIS (1-10) MST. Required of all students seeking an advanced degree in the department. Departmental approval. Course may be repeated with change in topics.

PFEN 8200 ADVANCED TEXTILE STRUCTURE DESIGN AND DEVELOPMENT (3) LEC. 3. Technical fabric design and development of complex woven, knit, braided and tufted structures for high performance applications. Fall.

PFEN 8990 RESEARCH AND DISSERTATION (1-10) DSR. PhD Research and Dissertation. Course may be repeated with change in topics.

Poultry Science - POUL

Courses

POUL 1000 INTRODUCTORY POULTRY SCIENCE (3) LEC. 2. LAB. 2. Introduction to the poultry species and their commercial production, physiology, nutrition and management. Fall.

POUL 2000 POULTRY AND EGG EVALUATION AND SELECTION (1) LAB. 1. A hands-on approach to poultry and egg evaluation based on the U.S. poultry and Egg guidelines and how to properly care for and handle the birds. Spring and Fall. Course may be repeated for a maximum of 4 credit hours.

POUL 3030 COMMERCIAL POULTRY PRODUCTION (4) LEC. 3. LAB. 3. The organization and management principles of the commercial poultry meat and egg production industries. Fall.

POUL 3060 POULTRY BREEDING, FERTILITY, AND HATCHABILITY (4) LEC. 3. LAB. 2. Pr., BIOL 1030 or BIOL 1037. Breeding systems used in developing modern breeds of poultry. Genetic, physiological and environmental factors affecting fertility, embryonic development, and hatch ability. Spring.

POUL 3150 POULTRY PHYSIOLOGY (4) LEC. 3. LAB. 2. Pr., BIOL 1030 or BIOL 1037. The physiological principles and characteristics of poultry species which directly interact with commercial management systems. Spring.

POUL 4100 SUPERVISED INVESTIGATION (1-4) IND. Pr., 2.50 GPA. Advanced independent investigation in major field of poultry or avian science. Requirements include review of literature, successful and timely completion of research project, and presentation of results in written and/or oral report. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

POUL 4920 POULTRY SCIENCE INTERNSHIP (3) INT. 3. SU. Pr., departmental approval. Practical on-the-job training in the poultry or food industry. Course may be repeated for a maximum of 9 credit hours.

POUL 4980 UNDERGRADUATE RESEARCH (2-4) IND. Directed research in the area of specialty within the department. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

POUL 5050 POULTRY FEEDING (4) LEC. 3. LAB. 2. Pr., (BIOL 1030 or BIOL 1037) and BCHE 3200. The application of the principles of nutrition to poultry; the functions of individual nutrients, their deficiency symptoms and their supply in terms of feedstuffs and practical poultry diets. Credit will not be given for both POUL 5050 and POUL 6050. Fall.

POUL 5080/5083/5084 POULTRY HEALTH (3) LEC. 3. Pr., (BIOL 1030 or BIOL 1037) and BIOL 3200 and (CHEM 2030 or CHEM 2070). Study of the prevention, diagnosis, control and treatment of economically important diseases of poultry. Credit will not be given for both POUL 5080 and POUL 6080. Spring.

POUL 5140 POULTRY PROCESSING AND PRODUCTS (4) LEC. 3. LAB. 3. Pr., CHEM 2030 or CHEM 2070. Processing, formulating and developing poultry products; includes meat and ingredient chemistry, processing steps and equipment used to create further processed poultry products. Credit is not allowed for both POUL 5140 or POUL 6140.

POUL 5160 PRINCIPLES OF FOOD SAFETY (3) LEC. 2. LAB. 3. Pr., (BIOL 1030 or BIOL 1037) and (CHEM 2030 or CHEM 2070). Identification and control of foodborne hazards in foods of animal origin. Introduction to Hazard Analysis and Critical Control Points. Credit will not be given for both POUL 5160 and POUL 6160. Spring.

POUL 6050 ADVANCED POULTRY FEEDING (4) LEC. 3. LAB. 2. An advanced study and review of the literature on the application of the principles of nutrition to poultry; the functions of individual nutrients, their deficiency symptoms and their supply in terms of feedstuffs and practical poultry diets. Credit will not be given for both POUL 5050 and POUL 6050. Fall. Departmental approval.

POUL 6080 ADVANCED POULTRY HEALTH (3) LEC. 3. An advanced study of the prevention, diagnosis, control and treatment of economically important diseases of poultry. Credit will not be given for both POUL 5080 and POUL 6080. Fall. Departmental approval.

POUL 6140 POULTRY PROCESSING AND PRODUCTS (4) LEC. 3. LAB. 3. Processing, formulating and developing poultry products; includes meat and ingredient chemistry, processing steps and equipment used to create further processed poultry products. Credit is not allowed for both POUL 6140 or POUL 5140.

POUL 6160 ADVANCED PRINCIPLES OF FOOD SAFETY (3) LEC. 2. LAB. 3. An advanced study and literature review of the identification and control of foodborne hazards in foods of animal origin. Introduction to Hazard Analysis and Critical Control Points. Credit will not be given for both POUL 5160 and POUL 6160. Spring. Departmental approval.

POUL 7100 SUPERVISED INVESTIGATION (1-4) IND. Advanced independent investigation in major field of poultry or avian science. Requirements include review of literature, successful and timely completion of research project, and presentation of results in written and/or oral report. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

POUL 7950 GRADUATE SEMINAR (1) SEM. 1. Literature in poultry science, food science or related field. Emphasis given to preparation, organization, and presentation of research materials and to reporting current literature in the field. Course may be repeated for a maximum of 3 credit hours.

POUL 7980 NON-THESIS RESEARCH (1-4) RES. Departmental approval; enrolled as POUL MAg student. Research conducted as part of the Master of Agricultural degree.

POUL 7990 RESEARCH AND THESIS (1-10) MST. Technical laboratory problems related to poultry. Course may be repeated with change in topics.

POUL 8100 GI SYSTEMS AND NUTRIENT UTILIZATION (3) LEC. 3. Pr., POUL 5050. Structure of feedstuffs and strategy in nutrient recovery from the gastrointestinal systems of fowl, swine, and ruminants.

POUL 8150 AVIAN PHYSIOLOGY (3) LEC. 3. Physiology of organ systems of birds with emphasis on domestic fowl. Fall. Students should have completed a course in animal or human physiology.

POUL 8160 LABORATORY TECHNIQUES IN MOLECULAR VIROLOGY (4) LEC. 1. LAB. 9. Pr., BIOL 5220 and BIOL 5230. Isolation, purification, and identification of viral nucleic acids and proteins. Credit will not be given for both POUL 8160 and CMBL 8160. Odd years. Fall. Departmental approval.

POUL 8620 ANAEROBIC BACTERIOLOGY (4) LEC. 2. LAB. 6. Pr., CHEM 6180. Principles of basic pathogenic anaerobic bacteriology. Basic clinical methodology anaerobic bacterial identification, pathogenesis, current research and literature in anaerobic bacteriology. Departmental approval.

POUL 8700 THE LIVING GUT (3) LEC. 3. Coreq., POUL 8620. Basic physiology of intestinal tract. Normal flora and its association with maintenance of homeostasis. Interaction of host intestinal components and microflora at the cellular level. Departmental approval. Summer.

POUL 8960 SPECIAL PROBLEMS (1-4) IND. A) Nutrition, B) Physiology, C) Health, D) Microbiology, E) Processing, F) Product Safety and Quality, G) Teaching, H) Immunonutrition. Course may be repeated with change in topic. Departmental approval.

POUL 8990 RESEARCH AND DISSERTATION (1-10) DSR. Technical laboratory problems related to poultry. Course may be repeated with change in topics.

Psychology - PSYC

Courses

PSYC 2010 INTRODUCTION TO PSYCHOLOGY (3) LEC. 3. Introduction to the various subfields of psychology.

PSYC 2017 HONORS INTRODUCTION TO PSYCHOLOGY (3) LEC. 3. Pr., Honors College. General Introduction to Psychology with consideration of the major areas of the discipline.

PSYC 2020 ORIENTATION TO PSYCHOLOGY MAJOR (1) LEC. 1. SU. Pr., (PSYC 2010 or PSYC 2017). Orientation to the psychology major. Overview and design of psychology curriculum, faculty introduction, faculty expectations, student assessment, career development, study skills, diversity, and ethics.

PSYC 2140 RESEARCH METHODS IN PSYCHOLOGY (4) LEC. 3. LAB. 1. Pr., STAT 2010 and (PSYC 2017 or PSYC 2010). Survey of the use of descriptive and experimental methods in psychology.

PSYC 2510 PSYCHOLOGY OF SEXUAL BEHAVIOR (3) LEC. 3. Biological, social and psychological dimensions of human sexuality.

PSYC 3050 HISTORY OF IDEAS IN PSYCHOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and STAT 2010 and PSYC 2140. Major events and ideas from ancient to modern times that comprise the history of psychology.

PSYC 3120 DEVELOPMENTAL PSYCHOLOGY (3) LEC. 3. Pr., PSYC 2010 or PSYC 2017. Introduction to physical, cognitive, social and emotional development across the lifespan.

PSYC 3500 APPLIED BEHAVIOR ANALYSIS (4) LEC. 3. LAB. 2. Pr., (PSYC 2010 or PSYC 2017) and STAT 2010 and PSYC 2140. Principles and procedures for management of human behavior. Fall, Spring.

PSYC 3510 BEHAVIORAL NEUROSCIENCE (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Exploration of the relationships between the brain and behavior.

PSYC 3520 PSYCHOLOGY OF LEARNING (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Phenomena involved in the acquisition of knowledge, skills, and patterns of action.

PSYC 3530 SENSATION AND PERCEPTION (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Study of perceptual phenomena and the structure and function of sensory systems.

PSYC 3540 COGNITIVE PSYCHOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Phenomena involved with thinking and remembering.

PSYC 3550 PSYCHOLOGY AND CULTURE (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Survey of the ways culture shapes, modifies and adds distinctiveness to human behaviors.

PSYC 3560 ABNORMAL PSYCHOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Exploration of our attempts to understand, explain and classify abnormal behavior patterns.

PSYC 3570 THEORIES OF PERSONALITY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Survey of selected classical and contemporary theories of personality.

PSYC 3580 SOCIAL PSYCHOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Scientific study of how people think about, influence, and relate to one another.

PSYC 3590 INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Application of basic psychological principles and theories in the workplace.

PSYC 3600 TRAINING AND SUPERVISION IN INDUSTRY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. The application of behavioral principles to problems common to the training and supervision of people in work organizations.

PSYC 3610 SPORTS PSYCHOLOGY (3) SEM. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. An inquiry into how motivation, emotion, personality, and other mind/body variables influence physiology and athletic performance. Seminar class includes applied exercises in emotional expression, stress and pain management, hypnosis, and diet and exercise challenges.

PSYC 3620 COGNITIVE NEUROSCIENCE (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Exploring how mental functions are linked to neural processes to enable the mind.

PSYC 3630 HUMAN MEMORY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Theories and application of human memory research, emphasizing long-term and working memory. Applications include education, law, and aging.

PSYC 3640 MOTIVATION AND EMOTION (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Overview of historical and contemporary perspectives on human motivation and emotion.

PSYC 3650 DRUGS AND BEHAVIOR (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and STAT 2010 and PSYC 2140. Introduction to the behavioral effects of drugs, including drug abuse and its treatment.

PSYC 3910 SUPERVISED RESEARCH EXPERIENCE (3) LEC. 3. SU. Supervised experience in research settings. Permission of department required.

PSYC 3940 EXPERIENTIAL LEARNING (3) PRA. 3. SU. Supplementary instruction concurrent with experience in some field of work involving application of psychological perspectives to community life. Permission of department required.

PSYC 3970 SPECIAL TOPICS IN PSYCHOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Theories, research and issues in contemporary psychology on selected topics. Course may be repeated for a maximum of 6 credit hours.

PSYC 4010 INTRODUCTION TO CLINICAL PSYCHOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. General introduction to the profession of clinical psychology focusing on techniques of assessment and intervention.

PSYC 4080 HEALTH PSYCHOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Psychological principles in health maintenance and health problems.

PSYC 4110 INTRODUCTION TO DEVELOPMENTAL DISABILITIES (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and STAT 2010 and PSYC 2140. Psychological principles in the care and treatment of developmentally disabled persons.

PSYC 4220 CHILD PSYCHOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Child psychology from a life-span developmental perspective, emphasizing social-emotional development in infancy.

PSYC 4230 ADOLESCENT AND ADULT DEVELOPMENT (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. In-depth exploration of cognitive and social development of adolescents and adults.

PSYC 4240 ADVANCED EXPERIMENTAL PSYCHOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. In-depth study of one of the traditional areas of experimental psychology such as learning, cognitive or social. Course may be repeated for a maximum of 6 credit hours.

PSYC 4250 PSYCHOLOGY OF CHOICE AND DECISION (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. In-depth treatment of the psychological science of choice (behavioral allocation) and decision-making.

PSYC 4260 PSYCHOLOGY OF ADDICTIVE BEHAVIORS (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Overview of various psychological features of addictive behaviors including alcohol and drug abuse, eating disorders, gambling and excessive sexual behavior.

PSYC 4910 HUMAN SERVICE PRACTICUM (3) PRA. 3. SU. Supervised experience in service-delivery settings. Permission of department required.

PSYC 4930 DIRECTED STUDIES (1-3) IND. Work under the direction of a faculty member on a psychological topic of mutual interest. Permission of departmental required. Only 6 credit hours may be applied to the Psychology major. Course may be repeated for a maximum of 9 credit hours.

PSYC 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. 2.30 GPA. STAT 2010. Course may be repeated for a maximum of 3 credit hours.

PSYC 4970 ADVANCED SPECIAL TOPICS IN PSYCHOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and PSYC 2140 and STAT 2010. Topics assigned by course instructor.

PSYC 4977 HONORS ADVANCED TOPICS IN PSYCHOLOGY (3) LEC. 3. Pr., Honors College. Topics assigned by course instructor.

PSYC 4997 HONORS RESEARCH AND THESIS (1-3) IND. Pr., Honors College. STAT 2010. Research in specialized topics. Course may be repeated for a maximum of 6 credit hours.

PSYC 5020 CHILD AND ADOLESCENT PSYCHOPATHOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and STAT 2010 and PSYC 2140. Description, etiology and treatment of psychological disturbances in children and adolescents.

PSYC 5610 BEHAVIORAL EFFECTS OF ENVIRONMENTAL CONTAMINANTS (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and STAT 2010 and PSYC 2140. Laboratory, occupational and epidemiological assessment of neurotoxic chemicals; risk analysis; developmental and policy considerations. Coverage includes heavy metals, pesticides, solvents, and abused drugs.

PSYC 5620 BEHAVIORAL PHARMACOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and STAT 2010 and PSYC 2140. A review of drugs that affect nervous system function and behavioral or neural mechanisms, that modify these effects. Topics include substance abuse, preclinical and clinical psychopharmacology, learning and memory, behavioral mitigation of drug effects. Meets APA criteria for Level 1 training in psychopharmacology.

PSYC 5960 SEMINAR IN PSYCHOLOGY (3) LEC. 3. Pr., (PSYC 2010 or PSYC 2017) and STAT 2010 and PSYC 2140. Seminar in research and theory on psychological topics. Course may be repeated with changes in topic.

PSYC 6020 CHILD AND ADOLESCENT PSYCHOPATHOLOGY (3) LEC. 3. Pr., PSYC 2120 and PSYC 3560. Description, etiology and treatment of psychological disturbances in children and adolescents.

PSYC 6610 BEHAVIORAL EFFECTS OF ENVIRONMENTAL CONTAMINANTS (3) LEC. 3. Laboratory, occupational and epidemiological assessment of neurotoxic chemicals; risk analysis; developmental exposures; and policy considerations. Coverage includes heavy metals, pesticides, solvents, and abused drugs.

PSYC 6620 BEHAVIORAL PHARMACOLOGY (3) LEC. 3. A review of drugs that affect nervous system function and behavioral or neural mechanisms, that modify these effects. Topics include substance abuse, preclinical and clinical psychopharmacology, learning and memory, behavioral mitigation of drug effects. Meets APA criteria for Level 1 training in psychopharmacology.

PSYC 6960 SPECIAL PROBLEMS (3) LEC. 3. Seminar in research and theory on psychological topics. Departmental approval. Course may be repeated for a maximum of 18 credit hours.

PSYC 7050 ASSESSMENT IN CLINICAL PSYCHOLOGY (3) LEC. 3. Survey of clinical methods of assessment including test construction and validation.

PSYC 7100 HISTORY OF IDEAS PSYCHOLOGY (3) LEC. 3. Historical developments in psychology with emphasis on the major theories and systems that have had an impact on current conceptions in psychology.

PSYC 7110 ETHICS AND PROBLEMS OF SCIENTIFIC AND PROFESSIONAL PSYCHOLOGY (1) LEC. 1. Survey of ethical issues and current problems in psychology.

PSYC 7120 TEACHING OF PSYCHOLOGY (2) LEC. 2. The problems and practices of teaching psychology at the college level. In addition to seminar meetings, students will work with faculty in appropriate courses. Course may be repeated for a maximum of 6 credit hours.

PSYC 7130 RESEARCH SEMINAR IN PSYCHOLOGY (1) SEM. 1. Overview of the research process, including the development of research questions, proposal writing and issues involved in protecting the welfare of research participants.

PSYC 7140 LEARNING AND CONDITIONING (3) LEC. 3. Respondent conditioning and operant behavior, including acquisition of language and other forms of individual/ environmental interactions.

PSYC 7150 BIOLOGICAL PSYCHOLOGY (3) LEC. 3. Behavior from a biological perspective, including theory and research from the neurosciences and biopsychology.

PSYC 7160 HUMAN DEVELOPMENT (3) LEC. 3. Introduction to conceptual and substantive issues of developmental psychology from a life-span developmental perspective.

PSYC 7170 THEORIES OF PERSONALITY (3) LEC. 3. Analysis of current issues in personality theory.

PSYC 7180 SOCIAL PSYCHOLOGY (3) LEC. 3. Topics and literature on the social foundations of behavior.

PSYC 7190 COGNITIVE PSYCHOLOGY (3) LEC. 3. A survey of the nature of human intellectual functioning, including pattern recognition, memory, problem solving, reasoning and language comprehension and generation.

PSYC 7200 ANIMAL COGNITION (3) SEM. 3. Experimental analysis of the mechanisms that underlie animal cognition, including attention, concept formation, counting, language, memory, perception, timing, and problem solving.

PSYC 7210 ANIMAL BEHAVIOR (3) LEC. 3. Pr., PSYC 7140. Evolution of animal behavior, including mating, parental care, feeding, social, predatory, and defensive behavior.

PSYC 7220 BEHAVIORAL PRINCIPLES (3) LEC. 3. Concepts and principles of operant and respondent conditioning and their relevance to changing and interpreting human behavior.

PSYC 7230 PSYCHOMETRIC THEORY (3) LEC. 3. Pr., STAT 7000 and (P/C, STAT 7270 or P/C, PSYC 7270 or P/C, STAT 7020). Introduction to basic quantitative theory behind the construction and interpretation of test scores and scales.

PSYC 7240 METHODS FOR STUDYING INDIVIDUAL BEHAVIOR (3) LEC. 3. Examination of strategies for measuring individual/ environment interaction, using environmental interventions and identifying behavior change and its causes.

PSYC 7250 CLINICAL RESEARCH METHODS AND ETHICS (3) LEC. 3. Introduction to research methods and ethics in clinical psychology with an emphasis on critical analysis of the scientific literature.

PSYC 7260 ETHICAL AND PROFESSIONAL ISSUES IN BEHAVIOR ANALYSIS (3) LEC. 3. Ethical and professional issues relevant to the practice of applied behavior analysis.

PSYC 7270 EXPERIMENTAL DESIGN IN PSYCHOLOGY (4) LEC. 4. Pr., STAT 7000 and STAT 7020. Introduction to the analysis of data collected under different experimental designs. Credit will not be given for both PSYC 7270 and STAT 7270.

PSYC 7300 ADULT PSYCHOPATHOLOGY (3) LEC. 3. Current theoretical conceptions and research in adult psychopathology.

PSYC 7310 AUTISM AND INTELLECTUAL DISABILITIES (3) LEC. 3. Survey of the definitions, terms, epidemiology, etiologies and current issues in the field of autism and intellectual disabilities.

PSYC 7910 PRACTICUM IN APPLIED PSYCHOLOGY (1-10) PRA. Supervised practicum in applied psychology. A maximum of 12 hours will apply toward degree. Departmental approval. Course may be repeated for a maximum of 30 credit hours.

PSYC 7930 DIRECTED STUDIES (1-3) IND. Work under the direction of a faculty member on a psychological topic of mutual interest. No more than 3 hours count toward major. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

PSYC 7970 RESEARCH IN SPECIAL TOPICS (3) IND. 3. Supervised scholarly activity related to student's field of study. Departmental approval. Course may be repeated with change in topics.

PSYC 7980 APPLIED BEHAVIOR ANALYSIS CAPSTONE PROJECT (1-10) PRA. Supervised practicum in applied psychology involving a behavior analysis project involving delivery of services to a consumer. Maximum of 6 credit hours will count toward degree. Departmental approval. Course may be repeated for a maximum of 30 credit hours.

PSYC 7990 RESEARCH AND THESIS (1-10) MST.

PSYC 8180 ADVANCED SOCIAL PSYCHOLOGY (3) LEC. 3. Pr., PSYC 7180. Theories, research and issues in contemporary social psychology. Departmental approval.

PSYC 8250 MULTIVARIATE METHODS (4) LEC. 3. LAB. 2. Pr., STAT 7000 or STAT 7020. Introduction to the theory behind multivariate analyses and the statistical programs that support them.

PSYC 8260 ANALYSIS OF TIME-RELATED DATA IN PSYCHOLOGY (3) LEC. 3. Pr., STAT 7020 or PSYC 8250. Theory and practical applications of statistical approaches for time-related data.

PSYC 8300 DEVELOPMENTAL PSYCHOPATHOLOGY (3) LEC. 3. Introduction to contemporary concepts, constructs and controversies within the field of developmental psychopathology.

PSYC 8310 INTRODUCTION TO CLINICAL ETHICS AND METHODS (3) LEC. 3. Interviewing skills, crisis intervention, professional and ethical issues in providing clinical services.

PSYC 8320 PSYCHOLOGICAL ASSESSMENT OF ADULTS (3) LEC. 3. Pr., (STAT 7270 or PSYC 7270) and PSYC 8310. Theories and techniques of the psychological assessment of adults.

PSYC 8330 COGNITIVE BEHAVIOR THERAPY (3) LEC. 3. Pr., PSYC 8310. Conceptual and applied issues related to behavioral principles of assessment and treatment.

PSYC 8340 SYSTEMS OF PSYCHOTHERAPY (3) LEC. 3. Pr., PSYC 7300. A survey of theories and research related to modern systems of psychotherapy.

PSYC 8350 APPLIED PSYCHOMETRIC PRINCIPLES (3) LEC. 3. Pr., STAT 7020. Analysis of classical and modern test theory with an emphasis on applied psychometric principles.

PSYC 8360 ASSESSMENT OF COGNITIVE ABILITIES AND ACHIEVEMENT (3) LEC. 2. LAB. 2. Theories and techniques for the assessment of cognitive abilities and academic achievement.

PSYC 8370 BEHAVIORAL AND PSYCHOLOGICAL ASSESSMENT (3) LEC. 3. Theories and techniques of psychological assessment across the lifespan. Enrollment in Clinical Psychology program.

PSYC 8400 ADVANCED CHILD AND ADOLESCENT PSYCHOPATHOLOGY (3) LEC. 3. Pr., PSYC 7300.Examination of current research and theory of behavioral, cognitive, and emotional disorders in childhood and adolescence.

PSYC 8410 PSYCHOLOGICAL ASSESSMENT OF CHILDREN AND FAMILIES (3) LEC. 3. Pr., PSYC 8310.Theories and techniques of the psychological assessment of children and their families.

PSYC 8420 BEHAVIOR CHANGE IN CHILDREN (3) LEC. 3. Pr., PSYC 8310 and (PSYC 8400 or PSYC 8410).Introduction to methods of prevention and treatment of cognitive, behavioral and emotional disorders of children.

PSYC 8430 CONCEPTUALIZATION AND TREATMENT OF CHILD PSYCHOPATHOLOGY (3) LEC. 3. Advanced study of developmental psychopathology and evidence-based treatment strategies for childhood disorders.

PSYC 8440 HEALTH PSYCHOLOGY AND BEHAVIORAL MEDICINE (3) LEC. 3. Contemporary research in health psychology and behavioral medicine and the empirical foundations of clinical practice.

PSYC 8450 THEORY AND METHOD IN HUMAN ALCOHOL AND DRUG RESEARCH (3) LEC. 3. Theoretical framework and methodological practices in basic research on human alcohol and drug abuse. Departmental approval.

PSYC 8460 ASSESSMENT AND TREATMENT OF ALCOHOL AND DRUG PROBLEMS (3) LEC. 3. Conceptual and empirical bases of clinical assessment and intervention for alcohol and drug problems. Departmental approval.

PSYC 8470 BEHAVIORAL ECONOMICS OF SUBSTANCE ABUSE (3) LEC. 3. Introduction to behavioral theories of choice and behavioral economics, and the application of these basic science areas to the study of substance abuse.

PSYC 8480 ADVANCED PROFESSIONAL AND ETHICAL ISSUES IN CLINICAL PSYCHOLOGY (3) LEC. 3. Graduate standing clinical psychology doctoral program. Advanced discussion of professional issues and ethical mandates of contemporary clinical psychology, emphasizing critical thinking skills and planning for a successful career in psychology.

PSYC 8500 EXPERIMENTAL ANALYSIS OF BEHAVIOR SEMINAR (1) SEM. 1. SU. Examination of professional preparation issues and recent scientific developments relevant to careers in the experimental analysis of behavior. Course may be repeated for a maximum of 6 credit hours.

PSYC 8510 CONTEXT AND CONSEQUENCES OF BEHAVIOR (3) LEC. 3. Pr., PSYC 7140.Advanced survey of the role that consequences play in acquisition, maintenance, and structure of behavior, and the methods by which this role is studied.

PSYC 8520 CONCEPTUAL AND THEORETICAL ANALYSIS IN PSYCHOLOGY (3) LEC. 3. Techniques of conceptual analysis relevant to the evaluation of theories and the interpretation and interpretation of psychological data.

PSYC 8530 BEHAVIOR ANALYSIS AND HUMAN DEVELOPMENT (3) LEC. 3. Examination of conceptual, theoretical, and scientific issues relevant to the study of psychological development from a behavior analytic perspective.

PSYC 8540 BEHAVIORISM (3) LEC. 3. Exploration of the philosophical and theoretical underpinnings of behavior analysis.

PSYC 8550 APPLIED BEHAVIOR ANALYSIS (3) LEC. 3. Pr., PSYC 7140.The scientific and conceptual foundations of applied behavior analysis and its strategies of intervention and evaluation. Departmental approval.

PSYC 8560 HUMAN OPERANT BEHAVIOR (3) LEC. 3. Pr., PSYC 8510.Strategies and tactics specific to the experimental analysis of operant processes in human learning and performance. Departmental approval.

PSYC 8570 APPLIED BEHAVIOR ANALYSIS 2 (3) LEC. 3. Applications of behavioral principles to the assessment and treatment of problem behavior.

PSYC 8700 ADVANCED INDUSTRIAL PSYCHOLOGY (3) LEC. 3. Analysis of methods and content of industrial (Personnel) psychology. Departmental approval.

PSYC 8710 ADVANCED ORGANIZATIONAL PSYCHOLOGY (3) LEC. 3. Analysis of major issues in organizational psychology. Departmental approval.

PSYC 8720 PERSONNEL SELECTION (3) LEC. 3. Pr., STAT 7000 and PSYC 8700.Analysis of classical, contemporary, theoretical, and practical issues related to personnel selection.

PSYC 8730 PERFORMANCE APPRAISAL (3) LEC. 3. Pr., (STAT 7270 or PSYC 7270) and PSYC 8700.Analysis of classical, contemporary, theoretical and practical issues related to the appraisal of employee work performance.

PSYC 8740 LEADERSHIP AND MOTIVATION SEMINAR (3) SEM. 3. Pr., (STAT 7270 or PSYC 7270) and PSYC 8700. Analysis of historical and contemporary theories of leadership and motivation and related research.

PSYC 8750 PROFESSIONAL ISSUES IN I/O PSYCHOLOGY (1) LEC. 1. Analysis of contemporary professional issues in I/O psychology. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

PSYC 8910 CLINICAL PRACTICUM (1-4) PRA. Pr., PSYC 8320 or PSYC 8410. Supervised practicum experience in clinical assessment and intervention techniques. Course may be repeated for a maximum of 30 credit hours.

PSYC 8920 INTERNSHIP (0) INT. Enrollment in full-time APA-approved 1-year pre-doctoral internship required for the Ph.D. in clinical psychology. May not enroll in other course work. Doctoral candidacy.

PSYC 8930 DIRECTED STUDIES IN PSYCHOLOGY (3) IND. Review of a body of literature leading to the generation and defense of the Major Area Paper (written portion of the general doctoral examination). Approved doctoral plan of study. Course may be repeated for a maximum of 9 credit hours.

PSYC 8970 SPECIAL TOPICS (1-3) SEM. In-depth seminar on issues related to selected specializations in psychology. Departmental approval. Course may be repeated for a maximum of 18 credit hours.

PSYC 8990 RESEARCH AND DISSERTATION (1-10) DSR. Departmental approval.

Public Relations Commu - PRCM

Courses

PRCM 3040/3043 FOUNDATIONS OF PUBLIC RELATIONS (3) LEC. 3. Pr., CMJN 2100. for majors and pre-majors; COI for non-majors and non-pre-majors. Overview of public relations looking at communication skills and technologies necessary for successful public relations. May count either PRCM 3040 or PRCM 3043.

PRCM 3050 CASE STUDIES AND ETHICS IN PUBLIC RELATIONS (3) LEC. 3. Pr., JRNL 1100 and (PRCM 3040 or PRCM 3043) and CMJN 2100. Overview of public relations looking at communication skills and technologies necessary for successful public relations.

PRCM 3080 INTERNATIONAL PUBLIC RELATIONS (3) LEC. 3. Exploration of public relations theory, research, and practice in an international context.

PRCM 3090 PUBLIC RELATIONS IN POLITICAL PROCESS (3) LEC. 3. Surveys the intersection of politics and public relations, offering students an opportunity get familiar with theoretical and practical principles in political processes.

PRCM 3260 STRATEGIC COMMUNICATION IN PUBLIC RELATIONS (3) LEC. 3. Framework for the strategy and integration of messages within public relations.

PRCM 3270 PUBLIC RELATIONS IN THE NOT FOR PROFIT ARENA (3) LEC. 3. Course focuses on nonprofit organization foundations and the role of public relations within those organizations.

PRCM 3280 SOCIAL MEDIA AND PUBLIC RELATIONS (3) LEC. 3. Course examines how new social media impact PR strategies. Declared major in AGCO or PUBR.

PRCM 4020 STYLE AND DESIGN IN PUBLIC RELATIONS MESSAGES (3) LEC. 3. Pr., JRNL 1100 and CMJN 2100 and (PRCM 3040 or PRCM 3043). Introduction to the use of style and design in public relations messages. Or departmental approval. Declared major in AGCO or PRCM.

PRCM 4080 WRITING FOR PUBLIC RELATIONS (3) LEC. 3. Pr., JRNL 1100 and CMJN 2100 and (PRCM 3040 or PRCM 3043) or CMJN 2100 and (PRCM 3040 or PRCM 3043) and JRNL 2310 and JRNL 3320 and JRNL 3470., Or departmental approval. Writing skills necessary for the practice of public relations. Declared major in AGCO or PRCM.

PRCM 4090 PUBLIC RELATIONS CAMPAIGNS (3) LEC. 3. Pr., JRNL 1100 and CMJN 2100 and PRCM 3040 and PRCM 4080 and PRCM 4510 and PRCM 3050. Capstone course designed to apply Public Relations and Communication principles to a campaign situation. Departmental approval. Declared major in AGCO or PRCM.

PRCM 4510 SURVEY RESEARCH METHODS (3) LEC. 3. Pr., CMJN 2100 and JRNL 1100 and PRCM 3040. Basic research principles and survey research as it is used by mass media and public relations. Or departmental approval. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

PRCM 4920 INTERNSHIP (3-6) AAB/INT. 3. SU. Pr., PRCM 3050 and PRCM 4080. Opportunity to apply classroom experience to real job setting. Course may be repeated for a maximum of 6 credit hours.

PRCM 4930 DIRECTED STUDIES IN PUBLIC RELATIONS (3) LEC. 3. Pr., JRNL 1100 and PRCM 3040 and CMJN 2100. Independent Study on a specific topic of interest not already addressed in any regular Public Relations course.

PRCM 4970 SPECIAL TOPICS IN PUBLIC RELATIONS (3) LEC. 3. Pr., JRNL 1100 and (PRCM 3040 or PRCM 3043) and CMJN 2100. This course focuses on narrowly-defined Public Relations topics not already covered in the current PRCM curriculum.

Radio/Television/Film - RTVF

Courses

RTVF 2330 LIVE EVENT VIDEO PRODUCTION (3) LEC. 3. Development and production of live video events.

RTVF 2350/2353/2354 INTRODUCTION TO FILM STUDIES (3) LEC. 2. LAB. 2. Introduction to film analysis, modes of film practice and critical approaches to the study of cinema.

RTVF 2370 ELECTRONIC FIELD PRODUCTION (3) LEC. 3. The principles and techniques of video tape production with emphasis on portable equipment, including production of electronic news gathering projects and short creative field-produced programs.

RTVF 2420 INTRODUCTION TO FILMMAKING (3) STU. 3. Developing technical and conceptual skills to communicate through digital film.

RTVF 2700 INTRODUCTION TO VISUAL MEDIA (3) LEC. 3. Introduction to basic visual media production with emphasis on visual principles, terminology and compositional structure for various media types.

RTVF 2800 MULTIMEDIA PRODUCTION (3) LEC. 3. Introduction to basic multimedia production, with emphasis on radio and web-based audio/visual production.

RTVF 3100 INTERMEDIATE FILMMAKING (3) STU. 3. Pr., RTVF 2420. Further develops conceptual and technical filmmaking skills.

RTVF 3210 SOUNDTRACKS MUSIC MASS MEDIA (3) LEC. 3. Historical, artistic and economic contexts of music and the mass media.

RTVF 3300 FOUNDATION OF MASS COMMUNICATION (3) LEC. 3. Pr., CMJN 2100. Historical and theoretical bases of mass communication in the U. S., emphasizing social, cultural, regulatory and economic aspects.

RTVF 3350 WRITING FOR RADIO, TELEVISION AND FILM (3) LEC. 3. Pr., CMJN 2100. The study, practice, and development of writing skills and techniques for radio, television, and film, including commercials, features, PSAs, and dramatic scripts. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 3380 BROADCAST NEWSWRITING (3) LEC. 3. Pr., CMJN 2100. Writing and editing news stories for broadcast. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 3580 REPRODUCING POPULAR CULTURE (3) LEC. 3. Postmodern study on the widespread recycling of media culture artifacts.

RTVF 3820 SEQUENCE DESIGN (3) LEC. 3. Pr., RTVF 2420 and RTVF 2700. Conceptual understanding, development and use of images and text for time based media.

RTVF 3970 SPECIAL TOPICS IN MEDIA (3) LEC. 3. Special topics concentration on production, distribution, and exhibition of mass communication. Course may be repeated for a maximum of 6 credit hours.

RTVF 4200 HISTORY OF AMERICAN BROADCASTING (3) LEC. 3. Pr., RTVF 3300 and CMJN 2100. The social, economic and technological evolution of radio and television in the United States. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4210 POPULAR CULTURE AND MASS COMMUNICATION (3) LEC. 3. Pr., RTVF 3300 and CMJN 2100.Examines myths, icons, rituals, heroes, celebrities, genres, narratives, stereotypes as experienced and presented within communication processes. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4240 WOMEN AND MASS MEDIA (3) LEC. 3. Pr., RTVF 3300 or CMJN 2100.Analysis of the relationship between media messages of women and socio-cultural definitions of women. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4260 MEDIA AND REALITY (3) LEC. 3. Pr., RTVF 3300 or PRCM 3040.Analysis of the representation of "reality" in the mass media. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4280 DIVERSITY ISSUES MASS MEDIA (3) LEC. 3. Pr., RTVF 3300 or PRCM 3040.Analysis of the relationship between media messages of minorities and socio-cultural definitions of minorities. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4300 BROADCAST PROGRAMMING AND CRITICISM (3) LEC. 3. Pr., RTVF 3300 and CMJN 2100.Introduces critical, theoretical, and organizational concepts, strategies, processes, and frameworks for programming for mass media systems. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4310 MEDIA AND SOCIETY (3) LEC. 3. Pr., RTVF 3300 and CMJN 2100.Examination of the relationship between the mass communication industry and a mass society. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4320 BROADCAST MANAGEMENT (3) LEC. 3. Pr., RTVF 3300 and CMJN 2100.Investigates principles and practices of managing broadcast stations and cable operations. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4340 TV AND THE FAMILY (3) LEC. 3. Pr., CMJN 2100 and RTVF 3300.Examination of the relationship between television and the American Family.

RTVF 4350 MEDIA RELATIONS (3) LEC. 3. Pr., RTVF 3300 and CMJN 2100.Major concepts and theories of media relations management with special emphasis on electronic media. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4360 HISTORY OF INTERNATIONAL CINEMA (3) LEC. 2. LAB. 2. Pr., RTVF 3300 and CMJN 2100.History of international cinema, including national cinemas, film movements, directors, and style. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4370 MEDIA AND RELIGION (3) LEC. 3. Pr., CMJN 2100 and RTVF 3300.Representations and influences of religions in the mass media.

RTVF 4380/4383 HISTORY OF THE AMERICAN FILM INDUSTRY (3) LEC. 2. LAB. 2. Pr., RTVF 3300 and CMJN 2100.History of the film industry and its relationship to U.S. society. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4390 FILM AUTHORS (3) LEC. 2. LAB. 1. Pr., RTVF 3300 and CMJN 2100.In-depth study of one or more filmmakers important to the development of film as a popular art form. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4410 BROADCAST NEWS PRODUCTION (3) LEC. 3. Pr., RTVF 3300 and CMJN 2100.Theoretical applications with practical experience in broadcast news program production. Emphasis on individual and team production skills and techniques. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4420 HISTORY OF MEDIA TECHNOLOGY (3) LEC. 3. Pr., RTVF 3300 and CMJN 2100.History of media technology from 18th-21st centuries. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4580 FAME, CELEBRITY, AND MEDIA CULTURE (3) LEC. 3. Pr., RTVF 3300 and CMJN 2100.Examination of celebrity and fame as distinguishing cultural phenomena. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4600 ADAPTATION FOR THE SHORT FILM (3) LEC. 3. Pr., RTVF 3420 and RTVF 3300.A survey of ways in which film can be adapted from pre-existing sources to create new works that stand on their own. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4800 ADVANCED MULTIMEDIA PRODUCTION (3) LEC. 3. Pr., RTVF 2800 and RTVF 3300.Design and production of advanced multimedia projects. Departmental approval. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF.

RTVF 4920 INTERNSHIP (3-6) AAB/INT. 3. SU. Opportunity to apply classroom experience to real job setting. Admission to internship program. Course may be repeated for a maximum of 6 credit hours.

RTVF 4930 DIRECTED STUDIES IN RADIO/TELEVISION/FILM (3) AAB/IND. 3. Pr., CMJN 2100 and RTVF 3300. Independent study on a specific topic of interest not already addressed in any regular Radio/Television/Film courses. Course may be repeated for a maximum of 6 credit hours.

RTVF 4940 VISUAL MEDIA PROJECTS (3) STU. 3. Pr., RTVF 4820 or RTVF 4100. Capstone course in which students work as a team on a visual media project under the direction of the instructor and in collaboration with a resident scholar or artist.

RTVF 4970 SPECIAL TOPICS IN RADIO/TELEVISION/FILM (3) LEC. 3. Pr., RTVF 3300 and CMJN 2100. Study of narrowly-defined RTVF topics not already covered in the current RTVF curriculum. May be repeated with a change in topic. Declared major in AGCO, COMM, JRNL, PRCM, or RTVF. Course may be repeated for a maximum of 6 credit hours.

Reading Education - CTRD

Courses

CTRD 1000 CRITICAL READING (2) LEC. 2. Strategies for reading expository text, with emphasis on vocabulary learning and text structures, toward goal of critical evaluation of evidence for authors' main-idea claims.

CTRD 3700 FUNDAMENTALS OF LANGUAGE AND LITERACY INSTRUCTION I (3) LEC. 2. LAB. 2. Theoretical foundations of language and literacy development of children and implications for teaching. Clinical experiences with children.

CTRD 3710 FUNDAMENTALS OF LANGUAGE AND LITERACY INSTRUCTION II (3) LEC. 2. LAB. 2. Pr., CTRD 3700. Research-based theory and teaching strategies to meet the language and literacy needs of all children, especially those at risk of reading difficulties. Includes laboratory teaching experience.

CTRD 4900 DIRECTED STUDIES (1-6) IND. SU. Independent reading, research, or other work focused on a content area of special interest. The student is directed by a faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTRD 5030 THE READING OF ADOLESCENTS (3) LEC. 3. Reading patterns of adolescents and uses of young adult literature in reading and English language arts programs, grades 6-12.

CTRD 5700 DEVELOPMENTAL READING K-12 (3) LEC. 3. Admission to Teacher Education. Theoretical and research foundations for a balanced approach to reading assessment and instruction, K-12. May count CTRD 5700, CTRD 6700, or CTRD 6706.

CTRD 5710 LITERACY AND INQUIRY IN THE CONTENT AREAS: GRADES 6-12 (3) LEC. 3. Admission to Teacher Education. Strategies to enhance literacy and inquiry for student's content-area learning in the middle and secondary school. May count CTRD 5710, CTRD 6710, or CTRD 6716.

CTRD 6030 THE READING OF ADOLESCENTS (3) LEC. 3. Reading patterns of adolescents and uses of young adult literature in reading and English language arts programs, grades 6-12.

CTRD 6700/6706 DEVELOPMENTAL READING K-12 (3) LEC. 3. Theoretical and research foundations for a balanced approach to reading assessment and instruction, K-12. May count CTRD 5700, CTRD 6700, or CTRD 6706.

CTRD 6710/6716 LITERACY AND INQUIRY IN THE CONTENT AREAS: GRADES 6-12 (3) LEC. 3. Strategies to enhance literacy and inquiry for student's content-area learning in the middle and secondary school. May count CTRD 5710, CTRD 6710, or CTRD 6716.

CTRD 7400 ASSESSMENT AND INSTRUCTION FOR READING INTERVENTION (3) LEC. 3. Research-based analysis of causal factors in reading difficulties, assessment strategies, and effective teaching with delayed readers. Includes practicum.

CTRD 7510 RESEARCH STUDIES IN READING EDUCATION (3) RES. 3. Review, analysis, and interpretation of available research with emphasis on designing new research to meet the changing needs of the school.

CTRD 7520 CURRICULUM AND TEACHING IN READING EDUCATION (3) LEC. 3. Teaching practices and reappraisal of selecting experiences and content for curriculum improvement.

CTRD 7530 ORGANIZATION OF PROGRAM IN READING EDUCATION (3) LEC. 3. Program, organization and development of basic and supplementary materials for guiding teachers, faculties and school systems in the continuous improvement of curriculum and teaching practices.

CTRD 7540 EVALUATION OF PROGRAM IN READING EDUCATION (3) LEC. 3. Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization.

CTRD 7900 DIRECTED STUDIES (1-6) IND. SU. Independent study directed toward desired objectives related to respective areas of specialization. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTRD 7910 PRACTICUM IN AREA OF SPECIALIZATION (1-6) PRA. SU. Experience relating theory and practice, usually in a school setting. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTRD 7920 INTERNSHIP (1-9) INT. SU. Supervised on-the-job experiences in a school, college or other appropriate setting, accompanied by regularly scheduled, on-campus discussion periods. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

CTRD 7970/7976 SPECIAL TOPICS (1-6) LEC. Provides an opportunity for graduate students and professors to pursue cooperatively selected topics. Departmental approval.

CTRD 7990/7996 RESEARCH AND THESIS (1-10) MST. Course may be repeated with change in topic.

CTRD 8950 SEMINAR (3) SEM. 3. Selected concepts and theoretical formulations of common interest. Course may be repeated for a maximum of 12 credit hours.

CTRD 8980 FIELD PROJECT (1-10) FLD. SU. Course may be repeated for a maximum of 10 credit hours.

CTRD 8990/8996 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with change in topics.

Real Estate Development - RDEV

Rehabilitation & Spec Educ - RSED

Courses

RSED 3000/3003 DIVERSITY AND EXCEPTIONALITY OF LEARNERS (3) LEC. 3. Pr., 2.00 GPA. Exploration of philosophical, social, cultural, and legal factors, and individual characteristics shaping education for individuals with disabilities; and roles/responsibilities of educators in inclusive settings. May count either RSED 3000 or RSED 3003.

RSED 3010 INTRODUCTION TO SPECIAL EDUCATION (3) LEC. 3. Orientation to special education profession including history, philosophy, federal legislation, contemporary issues and national organizations.

RSED 3020 INTRODUCTION TO REHABILITATION (3) LEC. 3. Orientation to the profession including history, philosophy, federal legislation, contemporary issues and national organizations.

RSED 3030 INTRODUCTION TO SPEECH PATHOLOGY IN SPECIAL EDUCATION (3) LEC. 3. Emphasis on the role and function of speech pathologist with respect to best practices in the school setting.

RSED 3100/3103 ASSESSMENT IN EARLY CHILDHOOD SPECIAL EDUCATION (3) LEC. 3. Pr., RSED 3010. Concepts and techniques for developmental screening, evaluation and assessment for young children (ages 3-8) with developmental delays and disabilities. Departmental approval. May count either RSED 3100 or RSED 3103.

RSED 3110/3113 ASSESSMENT IN SPECIAL EDUCATION (3) LEC. 3. Selection, administration, scoring and interpretation of standardized aptitude and educational tests used in the field of special education. May count either RSED 3110 or RSED 3113.

RSED 3120 ASSESSMENT IN REHABILITATION (3) LEC. 3. Selection, administration, scoring and interpretation of work sample systems and standardized tests of intelligence, aptitude, achievement, interest, and dexterity used in the field of rehabilitation.

RSED 4010 BEHAVIOR MANAGEMENT IN SPECIAL EDUCATION (3) LEC. 3. Skills to manage the behavior of special education students including behavioral assessment, selection criteria for appropriate intervention strategies and evaluation of intervention effectiveness.

RSED 4100 PROFESSIONAL COMMUNICATION IN REHABILITATION (3) LEC. 3. Theoretical and practical aspects of written and oral communication with rehabilitation and other professionals, clients, and family members.

RSED 4110 SUPPORTED EMPLOYMENT IN REHABILITATION (3) LEC. 3. Historical, legislative, theoretical, research and practical foundation of supported employment.

RSED 4120 INDEPENDENT LIVING SERVICES IN REHABILITATION (3) LEC. 3. The history, legislation and philosophy of the independent living movement and its impact on the quality of life for people with severe disabilities.

RSED 4130 ETHICAL PRACTICES IN REHABILITATION (3) LEC. 3. Ethical dilemmas that are routinely faced by practitioners in human service occupations. Departmental approval.

RSED 4900/4903 DIRECTED STUDIES (1-3) IND. SU. Content focus of study area will be translated into specific objectives with student learning guided by the instructor. Emphasis on exceptional learners. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

RSED 4910/4913 PRACTICUM (1-6) PRA. SU. Practice in educational or community service setting aligned with degree program option. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

RSED 4920 INTERNSHIP (9) AAB/INT. SU. Comprehensive supervised on-the job experience in a school, college or community-based setting serving individuals with disabilities. Departmental approval or admission to internship.

RSED 4970/4973 SPECIAL TOPICS (1-3) IND. Seminar in which upper-level students and professors engage in critical thinking regarding selected concepts, theories, research, and issues germane to the field of disabilities. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

RSED 5000 ADVANCED SURVEY OF EXCEPTIONALITY (3) LEC. 3. This course is an advanced study of exceptionality with emphasis upon the educational implications of disability and current issues in special education and rehabilitation. May count RSED 5000, RSED 6000, or RSED 6006.

RSED 5010 MEDICAL ASPECTS OF DISABILITY (3) LEC. 3. Medical terminology, basic body systems, common malfunctions, therapeutic services, restorative techniques, and disability evaluation for different disability groups and the vocational implications of each. May count RSED 5010, RSED 6010, or RSED 6016.

RSED 5020 PSYCHOSOCIAL ASPECTS OF DISABILITY (3) LEC. 3. Theoretical constructs and practical issues for various types of physical, mental, psychiatric, and social disabilities with implications for personal, vocational, social and community adjustment. May count RSED 5020, RSED 6020, or RSED 6026.

RSED 5030 MENTAL RETARDATION (3) LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition and classification of individuals with mental retardation. Educational and rehabilitative approaches and contemporary issues are emphasized. May count RSED 5030, RSED 6030, or RSED 6036.

RSED 5040 LEARNING DISABILITIES (3) LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition, and classification of individuals with learning disabilities. Educational and rehabilitative approaches and contemporary issues are emphasized. May count RSED 5040, RSED 6040, or RSED 6046.

RSED 5050 BEHAVIOR DISORDER (3) LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition, and classification of individuals with behavior disorders. Educational and rehabilitative approaches and contemporary issues are emphasized. May count RSED 5050, RSED 6050, or RSED 6056.

RSED 5060 SEVERE DISABILITIES (3) LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition and classification of individuals with severe levels of disability. Educational and rehabilitative approaches and contemporary issues are emphasized. May count RSED 5060, RSED 6060, or RSED 6066.

RSED 5070 MILD DISABILITIES (3) LEC. 3. The purpose of this course is to present the major concepts and issues related to mild disabilities. A variety of topics, ranging from the historical developments in the field to proposed teaching procedures for students, will be discussed. In-depth analysis of selected topics will be accomplished with student presentations and assignments. May count either RSED 5070 or RSED 6070.

RSED 5100 INFANTS AND TODDLERS WITH DISABILITIES (3) LEC. 3. Pr., RSED 3010. Historical, legislative, and philosophical basis of early intervention for young children, birth through age two, with special needs and their families. May count RSED 5100, RSED 6100, or RSED 6106.

RSED 5110 CURRICULUM IN EARLY CHILDHOOD SPECIAL EDUCATION (3) LEC. 3. Pr., RSED 3010. Admission to Teacher Education. Procedures for developing, implementing, and monitoring individualized educational programs in natural settings. Admission to Teacher Education. May count RSED 5110, RSED 6110, or RSED 6116.

RSED 5120 CURRICULUM IN ELEMENTARY SPECIAL EDUCATION (3) LEC. 3. Pr., RSED 3010. Admission to Teacher Education. Functional/developmental approach to the selection, development, implementation, and evaluation of curriculum activities for the collaborative instruction of elementary children with disabilities. May count RSED 5120, RSED 6120, or RSED 6126.

RSED 5130 CURRICULUM IN SECONDARY SPECIAL EDUCATION (3) LEC. 3. Pr., RSED 3010. Admission to Teacher Education. Functional/developmental approach to the selection, development, implementation, and evaluation of curriculum materials for the collaborative instruction of secondary students with disabilities. Admission to Teacher Education. May count RSED 5130, RSED 6130, or RSED 6136.

RSED 5140 CURRICULUM IN SEVERE DISABILITIES (3) LEC. 3. Pr., RSED 3010. Understanding a functional/developmental approach to selecting, developing, implementing, and evaluating appropriate curriculum activities for instructing students with severe disabilities. May count RSED 5140, RSED 6140, or RSED 6146.

RSED 5150 TEACHING METHODS IN SPECIAL EDUCATION (3) LEC. 3. Admission to Teacher Education. Instructional strategies in reading and math for students who have learning and behavior problems. May count RSED 5150, RSED 6150, or RSED 6156.

RSED 5160 COLLABORATION IN SPECIAL EDUCATION (3) LEC. 3. Admission to Teacher Education. Collaborative teaching, consultation, and teaming as a critical best practice in serving students with disabilities. May count RSED 5160, RSED 6160, or RSED 6166.

RSED 5170 TRANSITION FROM SCHOOL TO COMMUNITY (3) LEC. 3. History, philosophy, models, and definitions of transition with emphasis on practices, programs, and services. May count RSED 5170, RSED 6170, or RSED 6176.

RSED 5180 INSTRUCTIONAL CLASSROOM MANAGEMENT (3) LEC. 3. This course is designed to provide students with the theoretical basis and the practical application of classroom organizational and instructional classroom management for students with learning and behavioral problems. The focus of this class will be to discuss proactive approaches to instructional classroom management. May count RSED 5180, RSED 6180, or RSED 6186.

RSED 5200/5203 VOCATIONAL EVALUATION IN REHABILITATION (3) LEC. 3. Vocational evaluation and work adjustment techniques and strategies used within the rehabilitation process. May count RSED 5200, RSED 5203, RSED 6200, or RSED 6206.

RSED 5210 OCCUPATIONAL INFORMATION (3) LEC. 3. Identification, location, and use of data resources for job accommodation and modification strategies, labor market surveys, and job placement of persons with disabilities. May count RSED 5210, RSED 6210, or RSED 6216.

RSED 5220 PLACEMENT SERVICES IN REHABILITATION (3) LEC. 3. Theories, strategies, and techniques for job development, accommodation, modification, and placement of people with disabilities with application skills needed to facilitate employment. May count RSED 5220, RSED 6220, or RSED 6226.

RSED 5230 REHABILITATION ASSISTIVE TECHNOLOGY (3) LEC. 3. Basic computer literacy; use of commercially available software, and assistive technology for use by persons with disabilities. May count RSED 5230, RSED 6230, or RSED 6236.

RSED 5340 FOUNDATIONS OF SUBSTANCE ABUSE COUNSELING (3) LEC. 3. Provides knowledge of the nature of substance abuse, drug classification, models of addiction, assessment and diagnosis, treatment, and related issues. May count RSED 5340, RSED 6340, or RSED 6346.

RSED 6000/6006 ADVANCED SURVEY OF EXCEPTIONALITY (3) LEC. 3. This course is an advanced study of exceptionality with emphasis upon the educational implications of disability and current issues in special education and rehabilitation. May count RSED 5000, RSED 6000, or RSED 6006.

RSED 6010/6016 MEDICAL ASPECTS OF DISABILITY (3) LEC. 3. Medical terminology, basic body systems, common malfunctions, therapeutic services, restorative techniques, and disability evaluation for different disability groups and the vocational implications of each. May count RSED 5010, RSED 6010, or RSED 6016.

RSED 6020/6026 PSYCHOSOCIAL ASPECTS OF DISABILITY (3) LEC. 3. Theoretical constructs and practical issues for various types of physical, mental, psychiatric, and social disabilities with implications for personal, vocational, social and community adjustment. May count RSED 5020, RSED 6020, or RSED 6026.

RSED 6030/6036 MENTAL RETARDATION (3) LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition and classification of individuals with mental retardation. Educational and rehabilitative approaches and contemporary issues are emphasized. May count RSED 5030, RSED 6030, or RSED 6036.

RSED 6040/6046 LEARNING DISABILITIES (3) LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition, and classification of individuals with learning disabilities. Educational and rehabilitative approaches and contemporary issues are emphasized. May count RSED 5040, RSED 6040, or RSED 6046.

RSED 6050/6056 BEHAVIOR DISORDERS (3) LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition, and classification of individuals with behavior disorders. Educational and rehabilitative approaches and contemporary issues are emphasized. May count RSED 5050, RSED 6050, or RSED 6056.

RSED 6060/6066 SEVERE DISABILITIES (3) LEC. 3. Historical perspective, theoretical concepts, etiology, diagnosis, definition, and classification of individuals with severe levels of disability. Educational and rehabilitative approaches and contemporary issues are emphasized. May count RSED 5060, RSED 6060, or RSED 6066.

RSED 6070 MILD DISABILITIES (3) LEC. 3. The purpose of this course is to present the major concepts and issues related to mild disabilities. A variety of topics, ranging from the historical developments in the field to proposed teaching procedures for students, will be discussed. In-depth analysis of selected topics will be accomplished with student presentations and assignments. May count RSED 5070 or RSED 6070.

RSED 6100/6106 INFANTS AND TODDLERS WITH DISABILITIES (3) LEC. 3. Historical, legislative, and philosophical basis of early intervention for young children, birth through age two, with special needs and their families. May count RSED 5100, RSED 6100, or RSED 6106.

RSED 6110/6116 CURRICULUM IN EARLY CHILDHOOD SPECIAL EDUCATION (3) LEC. 3. Procedures for developing, implementing, and monitoring individualized educational programs in natural settings. May count RSED 5110, RSED 6110, or RSED 6116.

RSED 6120/6126 CURRICULUM IN ELEMENTARY SPECIAL EDUCATION (3) LEC. 3. Functional/developmental approach to the selection, development, implementation, and evaluation of curriculum for the collaborative instruction of elementary children with disabilities. May count RSED 5120, RSED 6120, or RSED 6126.

RSED 6130/6136 CURRICULUM IN SECONDARY SPECIAL EDUCATION (3) LEC. 3. Functional/developmental approach to the selection, development, implementation, and evaluation of curriculum materials for the collaborative instruction of secondary students with disabilities. May count RSED 5130, RSED 6130, or RSED 6136.

RSED 6140/6146 CURRICULUM IN SEVERE DISABILITIES (3) LEC. 3. Understanding a functional/developmental approach to selecting, developing, implementing, and evaluating appropriate curriculum activities for instructing students with severe disabilities. May count RSED 5140, RSED 6140, or RSED 6146.

RSED 6150/6156 TEACHING METHODS IN SPECIAL EDUCATION (3) LEC. 3. Instructional strategies in reading and math for students who have learning and behavior problems. May count RSED 5150, RSED 6150, or RSED 6156.

RSED 6160/6166 COLLABORATION IN SPECIAL EDUCATION (3) LEC. 3. Collaborative teaching, consultation, and teaming as a critical best practice in serving students with disabilities. May count RSED 5160, RSED 6160, or RSED 6166.

RSED 6170/6176 TRANSITION FROM SCHOOL TO COMMUNITY (3) LEC. 3. History, philosophy, models, and definitions of transition with emphasis on best practices, programs, and services. May count RSED 5170, RSED 6170, or RSED 6176.

RSED 6180/6186 INSTRUCTIONAL CLASSROOM MANAGEMENT (3) LEC. 3. This course is designed to provide students with the theoretical basis and the practical application of classroom organization and instructional classroom management for students with learning and behavioral problems. The focus of this class will be to discuss proactive approaches to instructional classroom management. May count RSED 5180, RSED 6180, or RSED 6186.

RSED 6200/6206 VOCATIONAL EVALUATION IN REHABILITATION (3) LEC. 3. Vocational evaluation and work adjustment techniques and strategies used within the rehabilitation process. May count RSED 5200, RSED 5203, RSED 6200, or RSED 6206.

RSED 6210/6216 OCCUPATIONAL INFORMATION (3) LEC. 3. Identification, location, and use of data resources for job accommodation and modification strategies, labor market surveys, and job placement of persons with disabilities. May count RSED 5210, RSED 6210, or RSED 6216.

RSED 6220/6226 PLACEMENT SERVICES IN REHABILITATION (3) LEC. 3. Theories, strategies, and techniques for job development, accommodation, modification, and placement of people with disabilities with application skills needed to facilitate employment. May count RSED 5220, RSED 6220, or RSED 6226.

RSED 6230/6236 REHABILITATION ASSISTIVE TECHNOLOGY (3) LEC. 3. Basic computer literacy; use of commercially available software, and assistive technology for use by persons with disabilities. May count RSED 5230, RSED 6230, or RSED 6236.

RSED 6340/6346 FOUNDATIONS OF SUBSTANCE ABUSE COUNSELING (3) LEC. 3. Provides knowledge of the nature of substance abuse, drug classification, models of addiction, assessment and diagnosis, treatment, and related issues. May count RSED 5340, RSED 6340, or RSED 6346.

RSED 7010/7016 REHABILITATION PROFESSIONS, PROGRAMS AND SERVICES (3) LEC. 3. Comprehensive examination of the evolution, nature and contemporary status of state-federal vocational rehabilitation system including roles of the professionals within this system. May count either RSED 7010 or RSED 7016.

RSED 7100/7106 ADVANCED ASSESSMENT AND INTERVENTION IN EARLY INTERVENTION (3) LEC. 3. Assessment and intervention strategies for special needs children, birth to age three. Departmental approval. May count either RSED 7100 or RSED 7106.

RSED 7110/7116 ADVANCED ASSESSMENT AND INTERVENTION EARLY CHILDHOOD SPECIAL EDUCATION (3) LEC. 3. Assessment and intervention strategies for special needs children, pre-k through 3rd grade. Departmental approval. May count either RSED 7110 or RSED 7116.

RSED 7120/7126 ADVANCED ASSESSMENT IN SPECIAL EDUCATION (3) LEC. 3. Advanced study of educational tests and procedures for diagnosing special training problems. Departmental approval. May count either RSED 7120 or RSED 7126.

RSED 7130/7136 ADVANCED ASSESSMENT I IN REHABILITATION (3) LEC. 3. Principles, process and techniques used to diagnose vocationally-related assets and liabilities of the individual with disabilities. May count either RSED 7130 or RSED 7136.

RSED 7140 ADVANCED ASSESSMENT II IN REHABILITATION (3) LEC. 3. Pr., RSED 7130 or RSED 7136. Interpretation of vocational evaluation data for prescriptive purposes and communication of that data through report writing and oral communication.

RSED 7150/7156 MULTICULTURAL ASPECTS OF DISABILITIES (3) LEC. 3. Study of three main areas relevant to multicultural competencies and standards for rehabilitation professionals: (a) acquisition of communication skills; (b) attitudes towards ethnic minorities, and (c) knowledge about minority populations. May count either RSED 7150 or RSED 7156.

RSED 7200/7206 ADVANCED INTERVENTION WITH INFANTS AND TODDLERS WITH DISABILITIES (3) LEC. 3. Pr., RSED 7100 or RSED 7106. Administration and on-going management of early intervention programs and service coordination of individualized family service plans and family support. Departmental approval. May count either RSED 7200 or RSED 7206.

RSED 7210/7216 ADVANCED INTERVENTION IN EARLY CHILDHOOD SPECIAL EDUCATION (3) LEC. 3. Pr., RSED 7110 or RSED 7116. Curriculum methods, intervention plans, intervention methods, physical and medical management, environmental and behavioral management, and evaluation of child and family outcomes. Departmental approval. May count either RSED 7210 or RSED 7216.

RSED 7220/7226 ADVANCED TEACHING METHODS IN SPECIAL EDUCATION (3) LEC. 3. Applied study and practice in analyzing, designing, constructing and evaluating teaching sequences and programs with empirical emphasis for design of instructional principles. May count either RSED 7220 or RSED 7226.

RSED 7230/7236 ADVANCED BEHAVIOR MANAGEMENT IN SPECIAL EDUCATION (3) LEC. 3. Provides skills necessary to direct academic and social performance and appropriately manage the behavior of students with special needs. Departmental approval. May count either RSED 7230 or RSED 7236.

RSED 7300/7306 REHABILITATION COUNSELING TECHNIQUES (3) LEC. 3. Facilitative communication skills and systematic problem solving skills for effective clinical practice. May count either RSED 7300 or RSED 7306.

RSED 7310/7316 PROPRIETARY REHABILITATION (3) LEC. 3. Pr., RSED 6210 and (RSED 7130 or RSED 7136). Vocational rehabilitation in private sector including case management and expert witness for workers compensation, personal injury litigation, and social security. May count either RSED 7310 or RSED 7316.

RSED 7320/7326 INDIVIDUAL COUNSELING APPROACHES IN REHABILITATION COUNSELING (3) LEC. 3. Survey of theoretical approaches involved in individual counseling with an emphasis on persons with disabilities using an eclectic point of view and psycho-educational approach. May count either RSED 7320 or RSED 7326.

RSED 7330/7336 GROUP COUNSELING IN REHABILITATION SETTINGS (3) LEC. 3. Pr., RSED 7320 or RSED 7326. Nature and function of group dynamics in rehabilitation settings including theories of groups, group structure, and psych-educational strategies used with rehabilitation clients. May count either RSED 7330 or RSED 7336.

RSED 7400/7406 CURRICULUM AND TEACHING IN SPECIALIZATION (3) LEC. 3. Curriculum design, content, and materials selection related to teaching practices in areas of specialization (intellectual disability, learning disabilities, behavioral disorders, etc.). RSED 7400 and RSED 7406 may be repeated for a maximum combined total of 6 credit hours.

RSED 7410/7416 PROGRAM IMPLEMENTATION IN SPECIALIZATION (3) LEC. 3. Program organization and development of materials for curriculum improvement and teaching practices in specialization area (mental retardation, learning disabilities, etc.). RSED 7410 and RSED 7416 may be repeated for a maximum combined total of 6 credit hours.

RSED 7420/7426 RESEARCH IN SPECIALIZATION (3) LEC. 3. Examination and interpretation of applied research in specialization area (mental retardation, learning disabilities behavioral disorders, etc.). May count either RSED 7420 or RSED 7426.

RSED 7430/7436 RESEARCH INTO PRACTICE (3) LEC. 3. Applied opportunities for translating instructional and behavioral research into practice. Departmental approval. May count either RSED 7430 or RSED 7436.

RSED 7440/7446 SEMINAR IN SPECIALIZATION (3) SEM. 3. Advanced students and professor(s) engage in critical thinking regarding selected concepts, theories, research and issues germane to the field of disabilities. Departmental approval. Course may be repeated with change in topics.

RSED 7460/7466 POSITIVE BEHAVIOR SUPPORTS (3) LEC. 3. Evaluating and implementing Positive Behavior Interventions and Supports (PBIS) for students grades PK through 12 in traditional and alternative educational settings. May count either RSED 7460 or RSED 7466.

RSED 7900/7906 DIRECTED STUDIES (1-3) IND. SU. Content focus of study area will be translated into specific objectives with advanced student learning guided by the instructor. The department's policy is to restrict independent study only for content not covered in RSED's course listing. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

RSED 7910/7916 PRACTICUM (1-6) PRA. SU. Practice in educational or community service setting aligned with degree program option. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

RSED 7920/7926 INTERNSHIP (9) INT. SU. Comprehensive supervised on-the-job experience in a school, college or community-based setting serving individuals with disabilities. Departmental approval.

RSED 7980/7986 NON-THESIS PROJECT (1-3) IND. SU. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

RSED 7990/7996 RESEARCH AND THESIS (1-10) MST. The content focus of the study area will be translated into specific objectives with the student learning toward that end, guided by the instructor. In addition to regular meetings with the instructor, the student will be evaluated and graded according to learning performance. The department's policy is to restrict independent study only for content not covered in RSED's course listing. Departmental approval.

RSED 8010 DISABILITIES AND RESEARCH METHODS (3) LEC. 3. History, principles, and methodology of single subject research with emphasis on the various types of research designs applied in rehabilitation and special education. Departmental approval.

RSED 8020 DISABILITIES AND APPLIED RESEARCH IN MEASUREMENT (3) LEC. 3. Classical measurement theory, individual differences determination, constructs related to diagnostic labels, measurement bias and fairness, nature-nurture controversy, and clinical versus statistical inference. Departmental approval.

RSED 8030 DISABILITIES AND PROFESSIONAL ISSUES (3) LEC. 3. Critical and contemporary issues regarding disability and its relationship to the leadership roles of professionals in special education and rehabilitation.

RSED 8040 DISABILITIES AND ASSISTIVE TECHNOLOGY (3) LEC. 3. Adaptive technology for use by persons with disabilities and proficiency in the use of computers and the World Wide Web as they relate to disabilities. Departmental approval.

RSED 8050/8056 DISABILITIES AND THE LAW (3) LEC. 3. Development of rehabilitation and special education laws from a historical, policy, leadership, and advocacy. perspective. Departmental approval.

RSED 8060 DISABILITIES AND LIFE SPAN TRANSITIONS (3) LEC. 3. Advanced study of historical, legal, legislative, philosophical, and service delivery issues and trends with emphasis on research studies and programs. Departmental approval.

RSED 8070 PROFESSIONAL SEMINAR (3) LEC. 3. SU. A series of doctoral seminars devoted to professional technical writing, grant writing, management, and research. Departmental approval. Course may be repeated with change in topics.

RSED 8110/8116 ORGANIZATIONAL LEADERSHIP AND CHANGE REHABILITATION (3) LEC. 3. Organizational leadership for the public and private non-profit sectors of rehabilitation emphasizing individual qualities required for successful leadership. Departmental approval. May count either RSED 8110 or RSED 8116.

RSED 8120/8126 MANAGEMENT OF PUBLIC SECTOR ORGANIZATIONS (3) LEC. 3. Objective and analytical perspective of public sector management and organizational leadership skills as it relates to rehabilitation settings. Departmental approval. May count either RSED 8120 or RSED 8126.

RSED 8230 EXAMINING DISABILITY DATABASES (3) LEC. 3. Conducting descriptive and correlational research by using existing publicly available databases in the field of disabilities.

RSED 8900 DIRECTED STUDIES (1-3) IND. SU. Content focus of study area will be translated into specific objectives with student learning guided by the instructor. Departmental approval. Course may be repeated with change in topics.

RSED 8950/8956 SEMINAR (1-3) SEM. Departmental approval. Provides an opportunity for advanced graduate students and professors to pursue cooperatively selected concepts and theoretical formulations. Course may be repeated for a maximum of 9 credit hours.

RSED 8980/8986 NON-THESIS PROJECT (1-10) IND. SU. May be repeated with change in topic. Provides an opportunity for advanced graduate students to pursue a project of interest. Departmental approval. Course may be repeated with change in topics.

RSED 8990/8996 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with change in topic. Departmental approval.

Religion - RELG

Courses

RELG 1010 INTRODUCTION TO RELIGIOUS STUDIES (3) LEC. 3. Major themes in religion, including religious experience, religion and society and the diversity of religions. Examples from various religious traditions.

RELG 1020 INTRODUCTION TO THE HEBREW SCRIPTURES (3) LEC. 3. Historical-critical study of the Hebrew Scriptures in their cultural setting. Emphasis on development of ancient Hebrew thought.

RELG 1030 INTRODUCTION TO THE NEW TESTAMENT (3) LEC. 3. Historical-critical study of the New Testament in its cultural setting. Major issues in New Testament study.

RELG 2020 THE CURRENT RELIGIOUS SCENE (3) LEC. 3. Religious themes and developments in contemporary American Life.

RELG 2030 HISTORY OF CHRISTIANITY (3) LEC. 3. Development of Christianity from 100 C.B. to the present. Major personalities, events and movements.

RELG 3330 EASTERN RELIGIONS (3) LEC. 3. Hinduism, Buddhism and Confucianism with secondary attention to other Asian religions.

RELG 3340 WESTERN RELIGIONS (3) LEC. 3. Islam, Judaism and Christianity, with attention to Druze religion and Bah'al.

RELG 4350 20TH CENTURY RELIGIOUS THOUGHT (3) LEC. 3. Major 20th Century theologians: Protestant, Catholic, Jewish.

RELG 4960 SPECIAL PROBLEMS IN RELIGIOUS STUDIES (3) LEC. 3. A program of independent study on a special topic. Course may be repeated for a maximum of 6 credit hours.

RELG 4967 HONORS SPECIAL PROBLEMS (3) LEC. 3. Pr., Honors College. Discuss readings on specialized topics in Religious Studies.

RELG 4970 SPECIAL TOPICS (3) LEC. 3. Course may be repeated with change in topics.

Rural Sociology - RSOC

Courses

RSOC 3190 AGRICULTURE AND SOCIETY (3) LEC. 3. Values and conflicts associated with technological and other changes in farming, rural communities and the food system. Perspectives on agrarian structures, food security, and government policy.

RSOC 3620 COMMUNITY ORGANIZATION (3) LEC. 3. Analysis of social organization at the community level. Conceptual framework developed to examine both internal and external forces affecting urban as well as rural communities in the U.S., and to identify strategies to strengthen local capacity to adapt to changing social and economic environments.

RSOC 4410 EXTENSION PROGRAMS AND METHODS (3) LEC. 3. Principles and models of applied social change in U.S. and developing nations. The Cooperative Extension System is analyzed as an educational institution. Fundamental steps in program development and evaluation.

RSOC 4910 DIRECTED FIELD EXPERIENCE (3) LEC. 3. Structured intensive involvement within an agency or organization serving people in communities or rural areas. Supervision is shared between agency personnel and department faculty who plan, consult, discuss, and evaluate student activities and reports. Departmental approval.

RSOC 4930 DIRECTED STUDIES (1-3) IND. Departmental approval. Individualized study of topics in rural sociology and community development, natural resources and environmental issues conducted in consultation with a faculty member. Course may be repeated for a maximum of 3 credit hours.

RSOC 4960 SPECIAL PROBLEMS IN RURAL SOCIOLOGY AND COMMUNITY DEVELOPMENT (1-3) LEC. Departmental approval. Investigation of problems in rural sociology and community development, natural resources and environmental issues conducted in consultation with a faculty member. Course may be repeated for a maximum of 3 credit hours.

RSOC 5510 SOCIAL WELFARE, FAMILY AND POVERTY (3) LEC. 3. Pr., SOCY 1000 or ECON 2020. Description for Bulletin: Measuring and explaining poverty inequality and their effects on families and society; analysis of anti-poverty programs.

RSOC 5610 RURAL SOCIOLOGY (3) LEC. 3. Pr., SOCY 1000 or SOCY 1007. Theories and conceptual approaches to rurality in international and domestic contexts. Rural-urban differences in demographic composition, occupational structure, attitudes, and values of rural people and regional cultures. Rural services and institutions as determinants of the quality of life.

RSOC 5640 SOCIOLOGY OF COMMUNITY DEVELOPMENT (3) LEC. 3. Pr., SOCY 1000 or SOCY 1007. Principles of applied social change at the community level in both industrialized and non-industrialized settings; impacts of economic and technological changes on urban and rural communities; citizen participation in community affairs.

RSOC 5650 SOCIOLOGY OF NATURAL RESOURCES AND THE ENVIRONMENT (3) LEC. 3. The social origins of contemporary environmental problems, emergence of environmentalism as a social movement within industrialized nations, and other topical issues.

RSOC 6510 SOCIAL WELFARE, FAMILY AND POVERTY (3) LEC. 3. Pr., SOCY 1000 or ECON 2020. Description for Bulletin: Measuring and explaining poverty and inequality and their effects on families and society; analysis of anti-poverty programs.

RSOC 6610 RURAL SOCIOLOGY (3) LEC. 3. Theories and conceptual approaches to rurality in international and domestic contexts. Rural-urban differences in demographic composition, occupational structure, attitudes and values of rural people and regional cultures. Rural services and institutions as determinants of the quality of life.

RSOC 6640 SOCIOLOGY OF COMMUNITY DEVELOPMENT (3) LEC. 3. Pr., SOCY 1000. Principles of applied social change at the community level in both industrialized and non-industrialized settings; impacts of economic and technological changes on urban and rural communities; and citizen participation in community affairs.

RSOC 6650 SOCIOLOGY OF NATURAL RESOURCES AND THE ENVIRONMENT (3) LEC. 3. The social origins of contemporary environmental problems, emergence of environmentalism as a social movement within industrialized nations, and other topical issues.

RSOC 7410 EXTENSION PROGRAMS AND METHODS (3) LEC. 3. Principles and models of applied social change in U.S. and developing nations. The Cooperative Extension Service is analyzed as an educational institution. Fundamental steps in program development and evaluation.

RSOC 7620 SOCIOLOGY OF COMMUNITY (3) LEC. 3. Emphasis on theories, conceptual approaches and methods for studying communities and assessing developmental needs with attention to organizational structure, power structure, decision-making and linkage networks to societal units.

RSOC 7630 POLITICAL ECONOMY OF DEVELOPMENT (3) LEC. 3. Theories of societal development applied to contemporary issues associated with change in non-industrialized nations. Exploration of institutional, class, and state interests that guide development processes, as well as alternative participatory development strategies.

RSOC 7650 SOCIOLOGY OF NATURAL RESOURCES AND THE ENVIRONMENT (3) LEC. 3. The social origins of contemporary environmental problems, emergence of environmentalism as a social movement within industrialized nations, and other topical issues.

RSOC 7700 METHODS OF SOCIAL RESEARCH (3) LEC. 3. Pr., SOCY 3700. Problem identification, hypothesis development and empirical analysis. Quantitative and qualitative procedures for obtaining social data using surveys, direct observation and secondary sources.

RSOC 7960 SPECIAL PROBLEMS IN RURAL SOCIOLOGY AND COMMUNITY DEVELOPMENT (1-3) LEC. Pr., departmental approval. Investigation of a problem in a particular area of interest involving an in-depth review of the literature, a research project, or an outreach education activity. Course may be repeated for a maximum of 6 credit hours.

RSOC 7970 SPECIAL TOPICS IN RURAL SOCIOLOGY AND COMMUNITY DEVELOPMENT (3) LEC. 3. Departmental approval. New topic in the area of rural sociology and community development.

RSOC 7990 RESEARCH AND THESIS (1-10) MST. Course may be repeated with change in topics.

Sciences & Math - SCMH

Courses

SCMH 1010/1013 CONCEPTS OF SCIENCE (4) LEC. 3. LAB. 2. Science Core. Interdisciplinary course which presents major scientific concepts in all the main fields of science. If a student takes SCMH 1010, that should precede taking either BIOL 1010, CHEM 1010, GEOL 1100, PHYS 1000, or PHYS 1150 for sequential completion of the AU core science requirement.

SCMH 1017 HONORS CONCEPTS OF SCIENCE (4) LEC. 3. LAB. 2. Pr., Honors College. Science Core. Interdisciplinary course which presents major scientific concepts in all the main fields of science. If a student takes SCMH 1010, that should precede taking either BIOL 1010, CHEM 1010, GEOL 1100, PHYS 1000, or PHYS 1150 for sequential completion of the AU core science requirement.

SCMH 1890 PRE-HEALTH PROFESSIONS ORIENTATION (1) LEC. 1. SU. Orientation and guidance for all freshmen planning to seek admission to health professions schools, such as medicine, dentistry, optometry, physical therapy, and pharmacy.

SCMH 3810 PRE-PHYSICAL THERAPY PRACTICUM (1) PRA. 2. SU. Direct observation of physical therapists at an approved facility in the Auburn-Opelika area. Departmental approval.

SCMH 3890 PRE-MEDICAL PRECEPTORSHIP (1) LAB. 1. SU. Direct observation and interaction with physicians in various medical specialties at East Alabama Medical Center or at their offices. Departmental approval.

SCMH 4920 SCIENCES AND MATHEMATICS INTERNSHIP (3) LEC. 3. SU. Practical on-the-job training in some area related to Sciences and Mathematics. Course may be repeated for a maximum of 6 credit hours.

SCMH 5010 CLINICAL APPLICATIONS I (3) LEC. 2. A study of the clinical/personal issues facing primary care physicians in the rural community. Must be enrolled in the Rural Medicine Program.

SCMH 5020 CLINICAL APPLICATIONS II (3) LEC. 2, CLN/LEC. 1. Pr., SCMH 5010.A continuation of SCMH 5010.

Secondary Education - CTSE

Courses

CTSE 1020 DEVELOPMENTAL STUDIES: MATHEMATICS (2) LEC. 1. LAB. 2. Develops mathematics skills conducive to successful college study. Credit counted toward enrollment, but not graduation. Departmental approval.

CTSE 1030 DEVELOPMENTAL STUDIES: ENGLISH LANGUAGE ARTS (2) LEC. 1. LAB. 2. SU. Develops reading/study and composition skills conducive to successful college study. Credit not counted toward graduation. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

CTSE 4000 TECHNOLOGY IN SCIENCE EDUCATION (2) LEC. 2. Introduction and application of current and emerging instructional and communication technologies for integration in the secondary science program.

CTSE 4030 CURRICULUM AND TEACHING I: MATHEMATICS (4) LEC. 2. LAB. 4. Admission to Teacher Education. Strategies for teaching and evaluating high school mathematics.

CTSE 4050 CURRICULUM AND TEACHING I: SOCIAL SCIENCE (4) LEC. 2. LAB. 4. Pr., CTSE 4210.Admission to Teacher Education. Application of current educational research and instructional strategies to the design of meaningful social studies instruction and assessment.

CTSE 4060 CURRICULUM AND TEACHING II: SOCIAL SCIENCE (4) LEC. 2. LAB. 4. Pr., CTSE 4050 and CTSE 4210.Admission to Teacher Education. Curriculum decision making and planning for instruction, evaluation, and classroom management.

CTSE 4070/4073 CURRICULUM AND TEACHING I: FOREIGN LANGUAGE (4) LEC. 2. LAB. 4. Admission to Teacher Education. Strategies for teaching foreign language students with a special emphasis on developing good instruction for comprehensible input and emerging speech tasks. May count either CTSE 4070 or CTSE 4073.

CTSE 4080/4083 CURRICULUM AND TEACHING II: FOREIGN LANGUAGE (4) LEC. 2. LAB. 4. Pr., CTSE 4070 or CTSE 4073.Admission to Teacher Education. Teaching strategies based on language acquisition theories that are appropriate for teaching foreign language students. May count either CTSE 4080 or CTSE 4083.

CTSE 4090 CURRICULUM AND TEACHING I: SCIENCE (4) LEC. 2. LAB. 4. Admission to Teacher Education. Planning, teaching strategies, evaluation techniques and classroom management procedures needed to be a successful science teacher.

CTSE 4100 CURRICULUM AND TEACHING II: SCIENCE (4) LEC. 2. LAB. 4. Pr., CTSE 4090.Admission to Teacher Education. Higher-order reasoning and process skills using state and national standards as guides. Theoretical and applied approaches.

CTSE 4150 CURRICULUM AND TEACHING I: ENGLISH LANGUAGE ARTS (4) LEC. 2. LAB. 4. Pr., CTSE 5010 and CTSE 5020.Admission to Teacher Education. Teaching the expressive English language arts, writing and speaking, in middle and high school classrooms.

CTSE 4160 CURRICULUM AND TEACHING II: ENGLISH LANGUAGE ARTS (4) LEC. 2. LAB. 4. Pr., CTRD 5030 and CTRD 5710.Admission to Teacher Education. Teaching the receptive English language arts; reading, listening, and viewing; in middle and high school classrooms.

CTSE 4200/4203 MANAGING MIDDLE AND HIGH SCHOOL CLASSROOMS (2) LEC. 2. Pr., P/C, CTSE 7920 or P/C, CTSE 7926 or P/C, CTMU 7920 or P/C, CTMU 7926 or P/C, CTMU 4920 or P/C, CTSE 4920.Admission to Teacher Education. The role of the teacher in classroom management. Methods for developing a positive learning environment. May count either CTSE 4200 or CTSE 4203.

CTSE 4210 SOCIAL SCIENCE CONCEPTS AND METHODS (3) LEC. 3. For pre-service teachers. Organizing social science disciplinary knowledge into an integrated framework that is meaningful, useful, and relevant to high school students. 15 hours in social sciences (2000 level or above).

CTSE 4900 DIRECTED STUDIES (1-6) IND. SU. Independent reading, research, or other work focused on a content area of special interest. The student is directed by a faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTSE 4910 PRACTICUM (1-6) PRA. SU. Admission to Teacher Education. Cooperatively selected field experience. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTSE 4920 INTERNSHIP (10) AAB/INT. 10. SU. Pr., P/C, CTSE 4200 or P/C, CTSE 4203. Admission to Teacher Education. Supervised teaching in a public secondary school, accompanied by scheduled discussions to analyze and evaluate the intern's experience. Admission to internship.

CTSE 4967 HONORS SPECIAL PROBLEMS (1-3) IND. SU. Pr., Honors College. Individual readings program. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CTSE 4970 SPECIAL TOPICS (1-4) LEC. Cooperatively selected concepts and theories pursued, normally in small groups. Departmental approval. Course may be repeated for a maximum of 4 credit hours.

CTSE 4997 HONORS THESIS (1-3) IND. SU. Pr., Honors College. The student thesis is finalized in this course. Course may be repeated for a maximum of 3 credit hours.

CTSE 5010 LANGUAGE STUDY FOR TEACHERS (3) LEC. 3. Theories of language development and language study applicable to middle and high school classrooms; implications for teaching grammar, usage, dialects, and semantics. Departmental approval. May count either CTSE 5010 or CTSE 6010. Junior standing.

CTSE 5020 RHETORIC AND COMPOSITION FOR TEACHERS (3) LEC. 3. Theories of rhetoric and composition applicable to middle and high school classrooms; implications for planning writing curricula, instruction, and assessment/evaluation. May count either CTSE 5020 or CTSE 6020.

CTSE 5040 TECHNOLOGY AND APPLICATIONS IN SECONDARY MATHEMATICS EDUCATION (4) LEC. 2. LAB. 4. Pr., MATH 2660. Admission to Teacher Education. Use of technological tools to enhance mathematics teaching and learning. May count either CTSE 5040 or CTSE 6040.

CTSE 5710 LANGUAGE STUDY FOR TEACHERS (3) LEC. 3. Theories of language development and language study applicable to middle and high school classrooms; implications for teaching grammar, usage, dialects, and semantics. Departmental approval. May count either CTSE 5710 or CTSE 6710.

CTSE 6010 LANGUAGE STUDY FOR TEACHERS (3) LEC. 3. Theories of language development and language study applicable to middle and high school classrooms; implications for teaching grammar, usage, dialects, and semantics. Departmental approval. May count either CTSE 5010 or CTSE 6010.

CTSE 6020 RHETORIC AND COMPOSITION FOR TEACHERS (3) LEC. 3. Theories of rhetoric and composition applicable to middle and high school classrooms; implications for planning writing curricula, instruction, and assessment/evaluation. May count either CTSE 5020 or CTSE 6020.

CTSE 6040 TECHNOLOGY AND APPLICATIONS IN SECONDARY MATHEMATICS EDUCATION (4) LEC. 2. LAB. 4. Use of technological tools to enhance mathematics teaching and learning. May count either CTSE 5040 or CTSE 6040.

CTSE 6710 LANGUAGE STUDY FOR TEACHERS (3) LEC. 3. Theories of language development and language study applicable to middle and high school classrooms; implications for teaching grammar, usage, dialects, and semantics. May count either CTSE 5710 or CTSE 6710.

CTSE 7090 INQUIRY METHODS OF SCIENCE TEACHING (4) LEC. 4. Study and practice of various inquiry based methods for teaching science as new teachers, including demonstration, laboratory, and inquiry projects. Departmental approval.

CTSE 7490 THE SECONDARY SCHOOL PROGRAM (3) LEC. 3. Implications of research and theory for the total secondary school program. Departmental approval.

CTSE 7510 RESEARCH STUDIES IN AREA OF SPECIALIZATION (3) LEC. 3. Research methodology, landmark studies, critique and application of research in the area of specialization.

CTSE 7520/7526 CURRICULUM AND TEACHING IN AREA OF SPECIALIZATION (3) LEC. 3. Nature of learners and of knowledge and implications for building curricula and planning instruction in the area of specialization. May count either CTSE 7520 or CTSE 7526.

CTSE 7530/7536 ORGANIZATION OF PROGRAM IN AREA OF SPECIALIZATION (3) LEC. 3. Program models, components, and standards in the area of specialization. May count either CTSE 7530 and CTSE 7536.

CTSE 7540/7546 EVALUATION OF PROGRAM IN AREA OF SPECIALIZATION (3) LEC. 3. Theoretical perspectives of evaluation and methods of evaluating learners, teachers, and curricula. May count either CTSE 7540 and CTSE 7546.

CTSE 7560 EQUITY ISSUES IN MATHEMATICS EDUCATION (3) LEC. 3. Theories, issues, and pedagogy related to achieving equity in mathematics education.

CTSE 7900/7906 DIRECTED STUDIES (1-6) IND. SU. Independent study directed toward desired objectives related to their respective areas of specialization. Includes evaluation at regular intervals by professor and student. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTSE 7910/7916 PRACTICUM IN AREA OF SPECIALIZATION (1-6) AAB/PRA. SU. Experience relating theory and practice, usually in a school setting. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTSE 7920/7926 INTERNSHIP (10) AAB/INT. 10. SU. Pr., P/C, CTSE 4200 or P/C, CTSE 4203. Supervised teaching in a public secondary school, accompanied by scheduled discussions to analyze and evaluate the intern's experience. Departmental approval. May count either CTSE 7920 or CTSE 7926.

CTSE 7970 SPECIAL TOPICS (1-6) LEC. Provides an opportunity for the graduate student and professor to pursue selected topics in depth. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

CTSE 7990/7996 RESEARCH AND THESIS (1-10) MST. Course may be repeated with change in topics.

CTSE 8950/8956 SEMINAR (3) SEM. 3. Selected concepts and theoretical formulations of common interest. Course may be repeated for a maximum of 12 credit hours.

CTSE 8980/8986 FIELD PROJECT (1-3) FLD. SU. Students review literature pertaining to a problem they have identified in their own practice, form hypotheses, plan intervention, collect data, analyze and interpret results, write summary of the project following approved guidelines, and orally defend the results of their project. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

CTSE 8990/8996 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with change in topics.

Social Work - SOWO

Courses

SOWO 2000 INTRODUCTION TO SOCIAL WORK (3) LEC. 3. Introduction to Social Work practice, examining career opportunities, history of the profession, practice settings, values, ethics and types of clientele.

SOWO 2650 HISTORY OF SOCIAL WELFARE (3) LEC. 3. Provides detailed knowledge of the development of social welfare policies and programs in the United States. Emphasizes analysis of political, economic, and social factors involved.

SOWO 3500 CHILD WELFARE (3) LEC. 3. Pr., SOCY 1000 or SOWO 2000. Social work practice in settings dealing with child abuse and neglect, foster care, child care and adoption.

SOWO 3600 AGING ISSUES AND SERVICES (3) LEC. 3. Pr., SOCY 1000 or SOCY 1007. Introduction to social services and social work with the elderly. Various socio-cultural issues and impact on the elderly are covered.

SOWO 3700 ADDICTIONS (3) LEC. 3. Pr., PSYC 2010 or PSYC 2017. Concept of addictions, theories of causality, social impact and the array of treatment approaches in today's society. Experiential component included.

SOWO 3800 HUMAN BEHAVIOR IN SOCIAL ENVIRONMENT I (3) LEC. 3. Pr., SOWO 2000 and BIOL 1000. Lifespan approach to biopsychosocial examination of behavior and early development. Special emphasis is given to influences of racism, sexism and ethnocentrism.

SOWO 3850 HUMAN BEHAVIOR IN THE SOCIAL ENVIRONMENT II (3) LEC. 3. Pr., SOWO 3800. Lifespan approach to biopsychosocial examination of behavior from adulthood through old age, emphasizing role of gender, sexism and sexual orientation.

SOWO 3910 FIELD PRACTICUM SEMINAR (3) PRA. 3. Pr., P/C, SOWO 2000. Introduces fields and settings of social work practice via placement in a selected social service agency. Includes a concurrent integrative seminar to analyze the experience.

SOWO 4060 SOCIAL WORK PRACTICE METHODS I (3) LEC. 3. Pr., SOWO 2000 and SOWO 3910 and SOCY 1000. Introduces the student to generalist practice methods and skills in engagement, assessment and goal setting with individual clients.

SOWO 4070 SOCIAL WORK METHODS II (3) LEC. 3. Pr., SOWO 4060. The practice skills and perspectives required for work with families and groups.

SOWO 4080 SOCIAL WORK METHODS III (3) LEC. 3. Pr., SOWO 4060. Focuses on generalist practice theory and skills as applied to communities, organizations and oppressed populations. Issues of social justice and social action emphasized.

SOWO 4090 SOCIAL WELFARE POLICY (3) LEC. 3. Pr., SOWO 2650. Critical analysis of policy issues and proposals in selected social welfare programs and their impact upon current social problems and social work values and ethics.

SOWO 4920 INTERNSHIP IN SOCIAL WORK (9) FLD. 9. SU. Pr., SOWO 4080. 480-hour field experience under joint supervision of agency and university. Application of generalist practice skills and research project required.

SOWO 4950 SENIOR INTEGRATIVE SEMINAR (3) SEM. 3. Pr., SOWO 4080. Taken concurrently with the senior field placement, seminar serves to guide students in integrating theory with practice through analysis of behavior and evaluation of practice skills.

SOWO 4967 HONORS SPECIAL PROBLEMS (1-3) IND. 3. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

SOWO 4970 SOCIAL WORK SPECIAL TOPICS (3) LEC. 3. Select, timely and/or controversial topics related to social work. Course content will depend upon the designated topic.

SOWO 4997 HONORS THESIS (1-3) IND. Pr., Honors College. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

Sociology - SOCY

Courses

SOCY 1000 SOCIOLOGY GLOBAL PERSPECTIVE (3) LEC. 3. Social Science I Core. Introduction to the study of social and cultural patterns of society.

SOCY 1007 HONORS SOCIOLOGY (3) LEC. 3. Pr., Honors College. Social Science I Core. Introduction to the study of social and cultural patterns in society.

SOCY 2000 SOCIAL ISSUES (3) LEC. 3. Pr., SOCY 1000 or SOCY 1007. An exploration of the claims and conflicts of public issues and moral apprehensions; topics may include crime, the environment, gender and racial inequality, various syndromes.

SOCY 2050 CRIME AND JUSTICE IN AMERICA (3) LEC. 3. The distribution and measurement of crime, different variations in criminal behavior and the handling of crime in the American criminal justice system.

SOCY 2100 POPULATION AND SOCIETY (3) LEC. 3. A survey of theories and research of demographic processes and their interaction with the economy, education, family, medicine, science and technology.

SOCY 2200 SOCIAL PSYCHOLOGY: SOCIOLOGICAL PERSPECTIVES (3) LEC. 3. An examination of collective influences on the person and the role the person plays in sustaining collective conditions.

SOCY 3000 CRIMINOLOGY (3) LEC. 3. Examine etiological issues related to crime. Major theories of crime causation from a wide variety of perspectives are explored in detail.

SOCY 3100 POLICE AND SOCIETY (3) LEC. 3. CRIM 2000 or CRIM 3000 or departmental approval. A sociological overview of policing and current issues that related to the police.

SOCY 3200 SPORTS IN AMERICA (3) LEC. 3. Sociological perspectives on sports in the social system; organization and culture of sports relationship to social class, race and gender; and the interconnections between sport and the larger society.

SOCY 3250 SENTENCING AND CORRECTIONS (3) LEC. 3. CRIM 2000 or CRIM 3000 or departmental approval. An in-depth analysis of sentencing policy and the correction system.

SOCY 3300 SOCIOLOGY OF THE FAMILY (3) LEC. 3. The family as a major social institution with emphasis on the American family; cross-cultural comparisons provide perspective.

SOCY 3400 SOCIAL THOUGHT (3) LEC. 3. Pr., SOCY 1000 or SOCY 1007.Examines ancient and contemporary thinking influencing the social and behavioral sciences and public commentaries on social issues and criticisms.

SOCY 3500 MINORITY GROUPS (3) LEC. 3. Pr., SOCY 1000 or SOCY 1007.An exploration of the sources and uses of minority representations in the U.S. addressing inequalities such as race, ethnicity, gender and sexual orientation.

SOCY 3550 DELINQUENCY AND JUVENILE JUSTICE (3) LEC. 3. CRIM 2000 or CRIM 3000 or departmental approval. The nature and distribution of delinquency in the United States, as well as the various components of the juvenile justice system.

SOCY 3700 METHODS OF SOCIAL RESEARCH (3) LEC. 3. Pr., SOCY 1000 or SOCY 1007.Methodological approaches to data collection used by social scientist including logic of science, hypothesis formation and research design.

SOCY 4000 SOCIALIZATION (3) LEC. 3. Examines mind, self, society and interaction as symbolic phenomena grounded in social process. Covers major intellectual influences, concepts and figures.

SOCY 4100 DEVIANCE (3) LEC. 3. Analysis of creation and reaction to deviance using theoretical approaches including demonic possession, social disorganization, pathological models and labeling examining several deviant groups.

SOCY 4200 MEDICAL SOCIOLOGY (3) LEC. 3. The nature and organization of medical practice and health delivery systems with special attention to the role of physicians, patients, disease and the relationship between culture, politics and health.

SOCY 4300 FIELD INSTRUCTION (3) LEC. 3. Supplementary instruction concurrent with experience in some field of work involving application of sociological perspectives to community life. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

SOCY 4400 CONTEMPORARY THEORY (3) LEC. 3. A survey of theorists from Comte to the present, emphasizing theory construction, theoretical analysis and differences in theoretical approaches.

SOCY 4700 THEORIES OF CRIME AND CRIMINALITY (3) LEC. 3. Theories of crime causation with emphasis on theory construction , theory analysis, and differences in theoretical approaches.

SOCY 4800 SENIOR SEMINAR (3) LEC. 3. Seminar builds upon prior coursework in theory, methods, and statistics for an in-depth examination of substantive areas in Sociology. Students must demonstrate proficiency in critical thinking and analysis and in written and oral communication.

SOCY 4960 SPECIAL PROBLEMS IN SOCIOLOGY (3) AAB/IND. 3. An independent reading program under supervision, to allow pursuit of specific interests in sociology not covered in other course offerings. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

SOCY 4967 HONORS SPECIAL PROBLEMS (1-3) IND. 3. Pr., Honors College.Departmental approval. Course may be repeated for a maximum of 3 credit hours.

SOCY 4997 HONORS THESIS (1-3) IND. Pr., Honors College.Departmental approval. Course may be repeated for a maximum of 3 credit hours.

SOCY 5200 SOCIOLOGY OF LAW (3) LEC. 3. Controversial and contemporary issues in the field of criminal law from a sociological perspective.

SOCY 5400 SOCIOLOGY OF MENTAL HEALTH (3) LEC. 3. Pr., SOCY 1000.The social analysis of the nature, development, identification, and treatment of mental illness. May count either SOCY 5400 or SOCY 6400.

SOCY 5500 VICTIMOLOGY (3) LEC. 3. The impact of victimization upon the crime victim, offender, and society, as well as the dynamics of the victim-offender relationship.

SOCY 5600 SEX CRIMES (3) LEC. 3. Criminal sexual behavior, the social influences on what is defined as sexually deviant, and how the criminal justice system handles sex offenders.

SOCY 5650 DRUGS AND SOCIETY (3) LEC. 3. The context and correlates of drug use, relationship with crime and delinquency, and societal reaction to drug abuse.

SOCY 5670 SOCIOLOGY OF GENDER (3) LEC. 3. Pr., SOCY 1000. Social definitions and implications of gender, with emphasis on work, media, law, and interpersonal relationships.

SOCY 5970 SPECIAL TOPICS IN SOCIOLOGY (3) LEC. 3. Study of substantive areas related to the discipline of sociology. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

SOCY 6200 SOCIOLOGY OF LAW (3) LEC. 3. Controversial and contemporary issues in the field of criminal law from a sociological perspective.

SOCY 6400 SOCIOLOGY OF MENTAL HEALTH (3) LEC. 3. Pr., SOCY 1000. The social analysis of the nature, development, identification, and treatment of mental illness. May count either SOCY 5400 or SOCY 6400.

SOCY 6500 VICTIMOLOGY (3) LEC. 3. The impact of victimization upon the crime victim, offender, and society, as well as the dynamics of the victim-offender relationship.

SOCY 6600 SEX CRIMES (3) LEC. 3. Criminal sexual behavior, the social influences on what is defined as sexually deviant, and how the criminal justice system handles sex offenders.

SOCY 6650 DRUGS AND SOCIETY (3) LEC. 3. The context and correlates of drug use, relationship with crime and delinquency, and societal reaction to drug abuse.

SOCY 6670 SOCIOLOGY OF GENDER (3) LEC. 3. Pr., SOCY 1000. Social definitions and implications of gender, with emphasis on work, media, law, and interpersonal relationships.

SOCY 6970 SOCIOLOGY SPECIAL TOPICS (3) LEC. 3. Study of substantive areas related to the discipline of sociology. Course may be repeated for a maximum of 6 credit hours.

SOCY 7000 ADVANCED SOCIOLOGICAL THEORY (3) LEC. 3. Pr., SOCY 4400. Reviews major types of sociological theory within the context of theoretical paradigms, and significant theoretical issues that face the discipline. Departmental approval.

SOCY 7100 STATISTICAL ANALYSIS OF SURVEY, AGGREGATE AND LARGE DATA SOURCES (3) LEC. 3. Pr., STAT 2010. Techniques commonly used in multivariate statistical analysis of data sources such as surveys, archival records, and other large data sets. Credit will not be given for both SOCY 7100 and STAT 7100. Departmental approval.

SOCY 7200 SEMINAR IN SOCIAL BEHAVIOR (3) SEM. 3. Research and theory concerning social and group influences on behavior.

SOCY 7250 SOCIOLOGY OF VIOLENCE (3) LEC. 3. In-depth coverage of various forms of violence from the sociological perspective.

SOCY 7800 MENTORING IN THE CLASSROOM (1) LEC. SU. 125st-hand experience in course building/planning, lecture and test construction, syllabus preparation, presenting and taping a lecture, performance critique, developing discussions, and other techniques. Departmental approval.

SOCY 7850 TECHNOLOGY AND TEACHING IN SOCIOLOGY (1) LEC. 1. SU. The use of technology as a teaching tool as it applies to Sociology. Departmental approval.

SOCY 7930 DIRECTED STUDIES (3) IND. 3. An independent reading course under the supervision of a department faculty member. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

SOCY 7990 RESEARCH AND THESIS (1-10) MST. In conjunction with the preparation of a thesis. Course may be repeated with change in topics.

Statistics - STAT

Courses

STAT 2010 STATISTICS FOR SOCIAL AND BEHAVIOR SCIENCES (4) LEC. 3. LAB. 2. Pr., MATH 1100 or MATH 1120 or MATH 1130 or MATH 1150. Introduction to basic principles of statistical reasoning and statistical procedures used in data analysis in the social and behavioral sciences.

STAT 2017 HONORS STATISTICS FOR SOCIAL AND BEHAVIORAL SCIENCES (4) LEC. 3. LAB. 2. Pr., Honors College. Introduction to statistical data analysis, statistical packages, and APA-style statistical reporting use in research in Psychology and other social and behavioral sciences.

STAT 2510/2513/2514 STATISTICS FOR BIOLOGICAL AND HEALTH SCIENCES (3) LEC. 3. Pr., MATH 1100 or MATH 1120 or MATH 1130 or MATH 1150 or MATH 1610 or MATH 1617. Introduction to statistical concepts, reasoning and methods used in data analysis, descriptive statistics, sampling distributions, statistical inference, confidence intervals, regression or correlation, contingency tables. Students who have previous credit in any higher-numbered math course may not receive credit.

STAT 2600 BUSINESS ANALYTICS I (3) LEC. 3. Pr., MATH 1680 or P/C, COMP 1000. Introduction to analytics in business including use of data to make business decisions, basic predictive business modeling, and communication of analytical results. Minimum 2.0 overall cumulative undergraduate GPA.

STAT 2610 STATISTICS FOR BUSINESS AND ECONOMICS (3) LEC. 3. Pr., MATH 1690. Introduction to statistical analysis, theory, and interpretation used in business and economics.

STAT 2710 STATISTICAL COMPUTING (1) LEC. 1. Pr., P/C, STAT 2010 and (P/C, STAT 2510 or STAT 2513) and P/C, STAT 2610 and P/C, STAT 3010. Introduction to basic statistical computing programs and methods..

STAT 3010 STATISTICS FOR ENGINEERS AND SCIENTISTS (3) LEC. 3. Pr., MATH 1610 or MATH 1617 or MATH 1710. Introduction to statistical methods and analysis used in engineering and science.

STAT 3600 PROBABILITY AND STATISTICS I (3) LEC. 3. Pr., MATH 1620 or MATH 1627 or MATH 1720. Calculus-based introduction to probability and statistics with an emphasis on practical problem-solving.

STAT 3610 PROBABILITY AND STATISTICS II (3) LEC. 3. Pr., STAT 3600. Departmental approval. Continuation of STAT 3600.

STAT 3611 PROBABILITY AND STATISTICS II LABORATORY (1) LAB. 2. The application of statistical techniques from STAT 3610. Departmental approval.

STAT 4020 INTERMEDIATE STATISTICAL METHOD (3) LEC. 3. Pr., STAT 3010. Departmental approval. Two-way ANOVA; experimental design; contingency tables; multiple regression techniques; modeling building; introductory non-parametric methods; goodness-of-fit tests.

STAT 4610 APPLIED REGRESSION ANALYSIS (3) LEC. 3. Pr., STAT 3610 or STAT 3010. Least squares estimation, hypothesis testing and confidence interval estimation in regression; simple, polynomial and multiple linear regression; residual and lack-of-fit analysis; use of dummy variables; multiple and partial correlation analysis; model building algorithms and model comparisons; transformations.

STAT 4620 APPLIED NONPARAMETRIC STATISTICS (3) LEC. 3. Review of elementary probability; goodness-of-fit tests; for singles and several location parameters; tests for scale parameters; distribution tests; measures of association; bootstrap and permutation tests.

STAT 4630 APPLIED TIME-SERIES ANALYSIS (3) LEC. 3. ARIMA models: the autoregressive process, the moving average process, and the ARMA process; forecasting, errors and confidence intervals, updating forecast models; estimation; model building and assessment; applications in econometrics.

STAT 4970 SPECIAL TOPICS IN STATISTICS (1-3) LEC. Special topics designed to meet the needs and interest of students. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

STAT 5110 SAS PROGRAMMING AND APPLICATIONS (3) LEC. 3. Pr., STAT 3010 or STAT 3610. Emphasis is placed on using SAS routines to obtain statistical analyses for common statistical methods and interpreting output.

STAT 5330 DATA BASED DECISION MAKING USING SIX SIGMA (3) LEC. 3. Pr., STAT 3610 and INSY 4330. Covers statistical tools needed for implementation of "Six Sigma", "Learn Six Sigma" and "Design for Six Sigma". Credit will not be given for both STAT 5330 and STAT 6330/ 6336. Departmental approval.

STAT 5630 SAMPLE SURVEY, DESIGN AND ANALYSIS (3) LEC. 3. Pr., STAT 3600. Departmental approval. Estimation of means, proportions, finite populations, stratified sampling, systematic sampling ratio estimations.

STAT 5670 PROBABILITY AND STOCHASTIC PROCESSES I (3) LEC. 3. Pr., MATH 2630. Random variables, discrete and absolutely continuous distributions. Poisson process, expectation and conditional expectation. Moment generating functions, limit distributions. Emphasis on probabilistic reasoning and problem solving. Credit will not be given for both STAT 5670 and MATH 5670.

STAT 5680 PROBABILITY AND STOCHASTIC PROCESSES II (3) LEC. 3. Pr., STAT 5670 or MATH 5670. Multivariate distributions, Central Limit Theorem, Laplace transforms, convolutions, simulations, renewal processes Continuous-time Markov chains, Markov renewal and semi-regenerative processes, Brownian motion and diffusion. Credit will not be given for both STAT 5680 and MATH 5680.

STAT 5690 CHAOTIC AND RANDOM PHENOMENA (3) LEC. 3. Pr., MATH 1620. Statistics and modeling of random phenomena in connection to computational complexity, data analysis, processes of chance and chaotic nonlinear systems. Credit will not be given for both STAT 5690 and MATH 5690.

STAT 6110 SAS PROGRAMMING AND APPLICATIONS (3) LEC. 3. Pr., STAT 3010 or STAT 3610 or P/C, STAT 7000. Emphasis is placed on using SAS routines to obtain statistical analyses for common statistical methods and interpreting output.

STAT 6330/6336 DATA BASED DECISION MAKING USING SIX SIGMA (3) LEC. 3. Pr., STAT 3610 and INSY 4330. Covers statistical tools needed for implementation of "Six Sigma", "Learn Six Sigma" and "Design for Six Sigma". Credit will not be given for both STAT 5330 and STAT 6330/ 6336. Departmental approval.

STAT 6630 SAMPLE SURVEY, DESIGN AND ANALYSIS (3) LEC. 3. Pr., STAT 3600. Departmental approval. Estimation of means, proportions, finite populations, stratified sampling systematic sampling ratio estimations.

STAT 6670/6676 PROBABILITY AND STOCHASTIC PROCESSES I (3) LEC. 3. Pr., MATH 2630. Random variables, discrete and absolutely continuous distributions. Poisson process, expectation and conditional expectation. Moment generating functions, limit distributions. Emphasis on probabilistic reasoning and problem solving. Credit will not be given for both STAT and MATH 6670.

STAT 6680 PROBABILITY AND STOCHASTIC PROCESSES II (3) LEC. 3. Pr., MATH 6670 or STAT 6670. Multivariate distributions, Central Limit Theorem, Laplace transforms, convolutions, simulations, renewal processes Continuous-time Markov chains, Markov renewal and semi-regenerative processes, Brownian motion and diffusion. Credit will not be given for both STAT 6680 and MATH 6680.

STAT 6690 CHAOTIC AND RANDOM PHENOMENA (3) LEC. 3. Pr., MATH 1620. Statistics and modeling of random phenomena in connection to computational complexity, data analysis, processes of chance and chaotic nonlinear systems. Credit will not be given for both STAT 6690 and MATH 6690.

STAT 7000 EXPERIMENTAL STATISTICS I (4) LEC. 4. Paired and independent sample t-tests, ANOVA, F-tests, contrasts, tests for trends, multiple comparisons, CR and RCB designs of experiments, regression. Departmental approval.

STAT 7010 EXPERIMENTAL STATISTICS II (3) LEC. 3. Pr., STAT 7000. Advanced topics in experimental design: writing linear models for experiment-expected mean squares, variance components, nested designs, Latin Square Designs, split plot designs, ANOVA and multiple regression.

STAT 7020 REGRESSION ANALYSIS (3) LEC. 3. Pr., STAT 7000. Introduction to the method of least squares as it applies to regression and analysis of variance. Simple linear regression, multiple regression, model selection and diagnostics. Departmental approval.

STAT 7030 CATEGORICAL DATA ANALYSIS (3) LEC. 3. Pr., STAT 3600 or MATH 3600 or STAT 7000. Methods for analysis of categorical response data. Topics include Chi-square tests, Likelihood Ratio tests, Logistic Regression, and Loglinear Modeling. Departmental approval.

STAT 7040 BIOSTATISTICS (3) LEC. 3. Pr., STAT 7000. Epidemiology, biometry, methods of survival analysis. Departmental approval.

STAT 7100 STATISTICAL ANALYSIS OF SURVEY, AGGREGATE AND LARGE DATA SOURCES (3) LEC. 3. Pr., STAT 2010. Techniques commonly used in multivariate statistical analysis of data sources such as surveys, archival records, and other large data sets. Credit will not be given for STAT 7100 and SOCY 7100. Departmental approval.

STAT 7270 EXPERIMENTAL DESIGN IN PSYCHOLOGY (4) LEC. 4. Pr., STAT 7000 and STAT 7020. Introduction to the analysis of data collected under differential experimental designs. Credit will not be given for both STAT 7270 and PSYC 7270.

STAT 7300/7306 ADVANCED ENGINEERING STATISTICS I (3) LEC. 3. Pr., STAT 3610. Advanced concepts of experimental design including blocking, regression approach to analysis of variance, fractional factorials in base-2, and base-3 designs. Emphasis throughout is on improving industrial products and processes. Credit will not be given for both STAT 7300 and INSY 7300. Departmental approval.

STAT 7310/7316 ADVANCED ENGINEERING STATISTICS II (3) LEC. 3. Pr., STAT 7300 or INSY 7300. Fractional factorial experimentation applied for the purpose of process and quality improvement and optimization, introduction to analysis of covariance, multiple regression analysis, and response surface analysis. Credit will not be given for both STAT 7310 and INSY 7310.

STAT 7600 STATISTICAL THEORY AND METHODS I (3) LEC. 3. Pr., STAT 3600. Random variables, probability distributions, parametric models, likelihood theory, testing. Departmental approval.

STAT 7610 STATISTICAL THEORY AND METHODS II (3) LEC. 3. Pr., STAT 7600. Likelihood ratio, regression, ANOVA, categorical data, non-parametric methods, decision theory.

STAT 7620 NONPARAMETRIC STATISTICS (3) LEC. 3. Pr., STAT 3600. Distribution-free methods of statistical inference. Sign, Wilcoxon signed-rank, and Mann-Whitney tests for location, the Chi-Square and Kolmogorov-Smirnov tests for goodness-of-fit. Measures of association. Departmental approval.

STAT 7700 GENERALIZED LINEAR MODELS (3) LEC. 3. Pr., STAT 7600. Exponential families and links functions, model fitting, likelihood methods, residual diagnostics, count data, estimating equations. Departmental approval.

STAT 7780 SURVIVAL ANALYSIS (3) LEC. 3. Pr., STAT 7000. Kaplan-Meier estimator, log-rank tests, Cox proportional hazard model, fully parametric models. Departmental approval.

STAT 7800 LINEAR MODELS (3) LEC. 3. Pr., STAT 7610 and MATH 2660. Departmental approval. A rigorous development of some of the important topics of applied statistics: the multivariate normal distribution analysis of variance, regression, aspects of experimental design.

STAT 7810/7816 MODERN STOCHASTIC PROCESSES I (3) LEC. 3. Pr., (MATH 6670 or STAT 6670) and MATH 6210. Classical and Modern Topics in stochastic processes (Markov chains, Poisson process, Brownian motion). Applications and stochastic models (queues, stationary processes, population dynamics, finances). Credit will not be given for both STAT 7810 and MATH 7810.

STAT 7820/7826 APPLIED STOCHASTIC PROCESSES I (3) LEC. 3. Pr., MATH 7810 or STAT 7810. Classical and modern topics in stochastic processes (Markov processes, Random Walks, Martingales, Brownian motion.) Introduction to stochastic integrals and differential equations. Applications (queues, population dynamics, chaos finances). Credit will not be given for both STAT 7820 and MATH 7820.

STAT 7830 APPLIED STOCHASTIC PROCESSES II (3) LEC. 3. Pr., STAT 7810.

STAT 7840 APPLIED MULTIVARIATE STATISTICAL ANALYSIS (3) LEC. 3. Pr., STAT 7000. Multivariate normal distribution, Hotelling's T^2 , MANOVA, discriminate analysis, principal components.

STAT 7850 THEORY OF STATISTICAL INFERENCE (3) LEC. 3. Pr., STAT 7610. Bayesian methods, Markov Chain Monte Carlo methods, resampling techniques. Departmental approval.

STAT 7860 APPLIED TIME SERIES ANALYSIS (3) LEC. 3. Pr., STAT 3610. Autoregressive and moving average models, differencing, estimation and forecasting, spectral theory. Departmental approval.

STAT 7960 SPECIAL PROBLEMS IN STATISTICS (1-10) RES. Credit will not be given for both MATH 7960 and STAT 7960. Course may be repeated for a maximum of 10 credit hours.

STAT 7970 SPECIAL TOPICS (1-3) LEC. Special topics designed to meet the needs and interests of students. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

STAT 7980 SPECIAL PROJECT (3) LEC. 3. SU. Non-thesis project in Statistics for Master's degree in Statistics (non-thesis option). Departmental approval.

STAT 7990 RESEARCH AND THESIS (1-10) DSR. Research for Master's thesis in Statistics. Course may be repeated with change in topic.

STAT 8400 ADVANCED QUANTITATIVE METHODS FOR MANAGEMENT I (3) LEC. 3. Pr., STAT 7000.or approved equivalent. Study of the application of linear regression analysis to business research. First advanced course in applied linear statistics models.

STAT 8410 ADVANCED QUANTITATIVE METHODS MANAGEMENT II (3) LEC. 3. or approved equivalent. Introduction to multivariate techniques in business research. Study of the theory and applications of ANOVA, ANCOVA, MANOVA, MANCOVE, Discriminate Analysis & Polytomous Logistic Regression.

STAT 8420 ADVANCED QUANTITATIVE METHODS FOR MANAGEMENT III (3) LEC. 3. Pr., STAT 7100 and STAT 8400 and STAT 8410.or approved equivalent. Third course in statistical modeling. Emphasis on applications of Principal Components Analysis, and Structural Equation Modeling to management research.

Supply Chain Management - SCM

Courses

SCMN 3150 OPS: MNGT OF BUSINESS PROCES (2) LEC. 2. Fundamental concepts, techniques and tools of business processes. Credit will not be given for both SCM 3150 and MNGT 3150. Junior standing.

SCMN 3710 LOGS: MNGT OF FULFILLMENT PROC (3) LEC. 3. Management of logistics processes involved in meeting customer demand, including inventory, transportation, distribution, and related activities. Credit will not be given for both SCM 3710 and AMLG 3710. Fall, Spring. Junior standing.

SCMN 3720 TRANS: MNGT OF PRODUCT FLOWS (3) LEC. 3. Management of transportation operations and the role of transportation in achieving supply chain objectives. Credit will not be given for both SCM 3720 and AMLG 3720. Fall, Spring. Junior standing.

SCMN 3730 PURCHASING: SUPPLY MANAGEMENT AND SEARCHING (3) LEC. 3. In-depth coverage of purchasing and supply management processes, strategies, and tools. Credit will not be given for both AMLG 4340 and SCM 3730. Fall, Spring. Junior standing.

SCMN 3810 PROFESSIONAL DEVELOPMENT IN SUPPLY CHAIN MANAGEMENT (1) LEC. 1. SU. Pr., P/C, SCM 3150.Career planning and preparation for supply chain internships and professional experience opportunities. Credit will not be given for both SCM 3810 and BUSI 3010, BUSI 4010, AVMN 4810, or SCM 4810.

SCMN 3910 PRACTICUM IN SUPPLY CHAIN MANAGEMENT (1) PRA. 3. SU. Pr., SCM 3150 or SCM 3710.Cooperatively selected field activity to gain practical SCM experience. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

SCMN 3920 INTERNSHIP IN SUPPLY CHAIN MANAGEMENT (3) INT. 3. SU. Pr., SCM 3150 or SCM 3710.Professional work experience in a supply chain focused position. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

SCMN 4700 SUPPLY CHAIN PERFORMANCE MANAGEMENT (3) LEC. 3. Pr., SCM 3710 or SCM 3720.Understanding and managing supply chain performance through the use of metrics, analysis, and improvement strategies. Credit will not be given for both SCM 4700 and AMLG 4880. Fall, Spring. College of Business Information Technology required.

SCMN 4730 SUPPLY CHAIN TOOLS AND TECH (3) LEC. 3. Pr., SCM 3150.Tools, techniques and technologies of various supply chain processes. Credit will not be given for both SCM 4730 and MNGT 3250.

SCMN 4780 TRANSPORTATION STRATEGY (3) LEC. 3. Pr., SCM 3710 and SCM 3720.Strategies and tactics for improving service and financial performance of transportation companies and their customers. Credit will not be given for both SCM 4780 and AMLG 4780. Fall, Spring.

SCMN 4800 SUPPLY CHAIN STGY:GLOBAL PERSP (3) LEC. 3. Pr., and SCM 3710 and SCM 3720 and SCM 3730.Capstone course providing an intensive study of strategies used to facilitate global flows of product, information, and payments. Fall, Spring.

SCMN 4900 DIRECTED STUDIES IN SUPPLY CHAIN MANAGEMENT (1-3) AAB/LEC. SU. Pr., SCM 3150 and SCM 3710 and SCM 3720 and SCM 3730.Advanced individual research of SCM topic under direction of a faculty member. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

SCMN 4970 SPEC TOPS IN SUPPLY CHAIN MGMT (3-6) AAB. Pr., SCMN 3150 and SCMN 3710. Current topics and issues related to the field of supply chain management. Course may be repeated for a maximum of 6 credit hours.

SCMN 5710 ADVANCED PROCESS ANALYSIS (3) LEC. 3. Pr., SCMN 3150. Advanced concepts, techniques and tools for process analysis; process performance; process control; process design. Credit will not be given for both SCMN 5710 and MNGT 5250 or MNGT 5350. Fall, Spring.

SCMN 5720 QUALITY & PROCESS IMPROVEMENT (3) LEC. 3. Pr., SCMN 3150 and STAT 2610. Fundamentals of process improvement; techniques for performing quality control functions; quality management systems. Credit will not be given for both SCMN 5720 and MNGT 5740. Fall, Spring.

SCMN 6710 ADVANCED PROCESS ANALYSIS (3) LEC. 3. Advanced concepts, techniques and tools for process analysis; process performance; process control; process design. Credit will not be given for both SCMN 6710 and MNGT 6250 or MNGT 6350. Fall, Spring.

SCMN 6720/6726 QUALITY & PROCESS IMPROVEMENT (3) LEC. 3. Pr., SCMN 3150 and STAT 2610. Fundamentals of process improvement; techniques for performing quality control functions; quality management systems. Credit will not be given for both SCMN 6720 and MNGT 6740. Fall, Spring.

SCMN 7600/7606 SUPPLY MNGT AND MANUFACTURING (3) LEC. 3. The management of purchasing, supply and materials management, manufacturing processes related to the fulfillment of supply chain requirements. Spring.

SCMN 7700/7706 DEMAND MANAGEMENT FULFILLMENT (3) LEC. 3. The management of logistical processes related to the fulfillment of supply chain requirements. Primary topics include integrated planning, operations, and performance analysis of demand, inventory, transportation, distribution, and customer relationships. Summer. Departmental approval.

SCMN 7800/7806 SUPPLY CHAIN STRATEGY (3) LEC. 3. Pr., SCMN 7606 and SCMN 7706 and SCMN 7600 and SCMN 7700. and SCMN 7600 and SCMN 7706. and SCMN 7606 and SCMN 7700. Advanced study of integrated supply chain theory, strategy, and practice. Topics include network design, collaboration, inventory visibility, process synchronization, information management, and financial analysis. Fall. Departmental approval.

Sustainability Studies - SUST

Courses

SUST 2000 INTRODUCTION TO SUSTAINABILITY (3) LEC. 3. Introduction to the interdisciplinary study of sustainability. May count either SUST 2000 or HONR 1027/HONR 1037.

SUST 4900 DIRECTED STUDIES (1-3) IND. SU. Advanced individual research and/or coursework in the field of sustainability studies. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

SUST 5000 SENIOR CAPSTONE IN SUSTAINABILITY (3) LEC. 3. Pr., SUST 2000. Capstone research seminar for students completing the Minor in Sustainability Studies.

Theatre - THEA

Courses

THEA 1010 INTRODUCTION TO THEATRE FOR MAJORS I (3) LEC. 2, LLB. 2. Overview of all areas of theatrical collaboration intended specifically for the incoming theatre major. Introduces theatre majors to academic skills they will need to pursue the theatre major at Auburn University. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 1110 INTRODUCTION TO THEATRE FOR MAJORS II (3) LEC. 2, LLB. 2. Pr., THEA 1010. Introduction to a variety of perspectives regarding theatrical practices, theories, and texts. Focus on productive working relationships and collaborative skills necessary for a successful life in the theatre. Course culminates in the creation of a new performance piece. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 1530 DANCE LAB 1 - TAP (1) LAB. 3. Introduction to traditional tap dance Exploration of technical concepts, rhythm combinations, and improvisations designed to test and develop tap dance skills. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 2 credit hours.

THEA 1570 DANCE LAB 1 - BALLET (1) LAB. 4.5. Beginning studio introduction to ballet technique Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 2 credit hours.

THEA 1670 DANCE LAB 1 - JAZZ (1) LAB. 3. Studio introduction to and exploration of Jazz technique. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 2 credit hours.

THEA 1910 PRODUCTION PRACTICUM I (1) STU. 4. Experience in the design/technical and management areas of production. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 2 credit hours.

THEA 2010 INTRODUCTION TO THEATRE (3) LEC. 3. Fine Arts Core. Appreciation of theatre arts including stage, television, and film. Development of sensitive and critical sophistication as articulate, discriminating theatre-goers. Play and film viewing, play-reading, critiques, and term projects.

THEA 2017 HONORS INTRODUCTION TO THE THEATRE (3) LEC. 3. Pr., Honors College.Fine Arts Core. Appreciation of theatre arts. Development of sensitivity and critical skills as theatre-goers. Play attendance, reading, critiques, and term projects.

THEA 2080 PERFORMANCE TECHNIQUES FOR THE CAMERA (3) LEC. 1, LST. 3. Theory and practice of specialized performance techniques for television and film. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 2110 VOICE AND MOVEMENT FUNDAMENTALS (2) STU. 4. Coreq., THEA 2111Exploration and study of fundamental issues in vocal production, articulation, and movement. Introduction to vocal anatomy, breathing/relaxation/alignment techniques, and integrated vocal and movement exercises applied in a variety of texts. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 2111 VOICE AND MOVEMENT FUNDAMENTALS LAB (1) LAB. 2. Coreq., THEA 2110Exploration and application of vocal and physical skills designed to enhance vocal production, physical flexibility and integrated execution of vocal and physical performance skills. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 2120 ACTING I (3) LEC. 2, LST. 2. Introduction to basic acting techniques, literature, and performance through improvisation, contemporary scene study and attendance at theatre performances. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 2310 THEATRE TECHNOLOGY I (3) LEC. 3. Coreq., THEA 2311A comprehensive introduction to the study of technical theatre; theoretical and practical applications of equipment, materials, and techniques used in technical theatre. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 2311 THEATRE TECHNOLOGY I LAB (1) LAB. 4. Coreq., THEA 2310A comprehensive introduction to applied work in technical theatre; practical applications of equipment, materials, and techniques used in technical theatre. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 2400 DESIGN AESTHETICS (3) LEC. 3. An exploration of the fundamental elements and principles of design, pictorial composition, and design theory, and their relationships and potential for application in scenic, costume, and lighting design. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 2570 DANCE LAB 2 - BALLET (1) LAB. 4.5. Pr., THEA 1570.Intermediate studio training in ballet technique. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 2 credit hours.

THEA 2610 COSTUME CONSTRUCTION (3) LEC. 1, LST. 3. Fundamentals of machine sewing techniques, pattern drafting and draping, fabric dyes, and craftwork as they relate to theatrical costuming. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 2650 STAGE MAKEUP (3) LEC. 1, LST. 3. Theories and techniques of stage makeup, practical design and execution of basic makeup techniques, special effects, and character makeups. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 2670 DANCE LAB 2 - JAZZ (1) LAB. 3. Pr., THEA 1670. Intermediate studio training in Jazz technique. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 2 credit hours.

THEA 2810 THEATRE PRODUCTION I (3-6) STU. Coreq., THEA 2820. Intensive study of theatre arts through participation in the AU Summer Repertory Company, focusing mainly on technical work and design. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

THEA 2820 SUMMER REPERTORY THEATRE COMPANY I (3-6) STU. Coreq., THEA 2810A. Concentrated workshop experience in all aspects of theatre production through participation in rehearsal and performance. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

THEA 2840 BEGINNING DANCE TECHNIQUES (3) LEC. 1, LST. 3. Beginning level dance technique and theory, focusing on dance as an art form, including a survey of dance in different cultural and historical contexts. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 6 credit hours.

THEA 2910 PRODUCTION PRACTICUM II (1) STU. 4. Pr., THEA 1910. Experience in the design/technical and management areas of production. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 4 credit hours.

THEA 2940 APPLIED THEATRE I: ACTING (1) STU. 4. Intensive applied work for students cast in AU Theatre productions. Prerequisites: Cast in AU Theatre production. Course may be repeated for a maximum of 4 credit hours.

THEA 3110 VOICE FOR THE ACTOR II (3) LEC. 2, LST. 2. Pr., THEA 2110. Continuing study of vocal production and articulation techniques in texts of increasing complexity. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3120 ACTING II (3) LEC. 2, LST. 2. Pr., THEA 2120. Exploration of internal and external acting theory and techniques in modern and classical scene study. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3140 MUSIC THEATRE ACTING (3) LEC. 3, LAB. 3. Exploration of acting techniques and performance through music theatre scene and song study, analysis, and history of music theatre repertoire culminating in public performance. Prerequisite: Admission into the Music Theatre degree program (THMU) or Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3150 BFA PERFORMANCE STUDIO I (4) LEC. 3, LST. 5. Intensive study and practice integrating advanced contemporary scene study, audition technique, and the Fitzmaurice Voicework system. Prerequisites: Admission into the THPR or THMU majors. Theatre majors who do not earn a grade of "C" or better must re-audition for the BFA performance program and repeat the course.

THEA 3160 BFA PERFORMANCE STUDIO II (4) LEC. 3, LST. 5. Pr., THEA 3150. Intensive study and practice integrating Shakespeare and scene study of poetic texts with continuing work in the Fitzmaurice Voicework system. Theatre students who do not earn a grade of "C" or higher must re-audition for the BFA Performance program and repeat THEA 3150 and THEA 3160.

THEA 3190 SINGING PRACTICUM (1) STU. 1. Instruction in the primary principles of healthy vocal production, efficient breathing, projection, diction and interpretation. Prerequisite: Admission into the Bachelor of Fine Arts Performance program (THPR). Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3200 STAGE MANAGEMENT (3) LEC. 3. Examination of the role and responsibilities of the stage manager in the producing organization: management, organization, auditions, rehearsal, and production procedures. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3320 THEATRE TECHNOLOGY II (3) LEC. 2, LST. 2. Pr., THEA 2310. Theoretical and practical applications of equipment and techniques in technical theatre. Topics include light, sound mechanics, theatre rigging, equipment, special effects, and computer applications. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3330 SCENE PAINTING (3) LEC. 2, LAB. 2. Pr., THEA 2400. Studio oriented course introducing the principles, techniques, and media of the scenic artist. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3350 TECHNICAL DIRECTION/PRODUCTION MANAGEMENT (3) LEC. 3. Pr., THEA 2310 and THEA 3320. Exploration of the roles and responsibilities of the Technical Director and the Production Manager in the coordination and execution of technical elements for theatre productions. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3400 RENDERING FOR THE THEATRE (3) LEC. 2. LAB. 2. Pr., THEA 2400.Traditional drawing and rendering techniques and medias that help the designer to communicate scenic, costume, and lighting designs. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3410 SCENE DESIGN I (3) LEC. 2, LST. 2. Pr., THEA 2400.Discussion, research, and execution of theory and practices of designing scenery for the stage. Emphasis on traditional style and methods of design and presentation for the proscenium theatre. Or departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3420 PROPERTY DESIGN AND TECHNOLOGY (3) LEC. 2, LST. 2. Pr., THEA 3320.History, design, organization, application of materials, and techniques used in the design and construction of properties for the theatre, film, and television. Or departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3450 DRAFTING FOR THE THEATRE I (3) LEC. 2, LST. 2. Pr., THEA 2310.A comprehensive study of the techniques and methods used in the graphic representation of stage scenery, equipment, and properties design. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3510 LIGHTING DESIGN (3) LEC. 2, LST. 2. Pr., THEA 2310.Studio course that explores the theory, research, and practice of stage lighting, practical illumination, and effects lighting. Or departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3520 SOUND DESIGN (3) LEC. 2, LST. 2. Pr., THEA 3320.A course to develop an in-depth understanding of the equipment and techniques used in sound design, as both a design and technical medium. Or departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3570 DANCE LAB 3 - BALLET (1) LAB. 4.5. Pr., THEA 2570.Intermediate advanced studio in ballet technique. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

THEA 3610 ADVANCED COSTUME CONSTRUCTION (3) LEC. 2, LST. 2. Pr., THEA 2610.Historical pattern making and draping, millinery skills, and craft techniques, and their practical applications in theatre costuming. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3640 COSTUME DESIGN (3) LEC. 2, LST. 2. Pr., THEA 2400.Costume design and rendering as it relates to historical and original design for the theatre. Exploration of design for television, commercials, and rock stars. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3670 DANCE LAB 3 - JAZZ (1) LAB. 3. Pr., THEA 2670.Intermediate advanced studio training in Jazz technique. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

THEA 3700 THEATRE HISTORY, THEORY AND CRITICISM I-TEXT (3) LEC. 2, AAB/LEC. 2. An examination of the history and literature of the theatre from prehistory to the present with an emphasis on text as a broad category for understanding a variety of issues and topics relevant to contemporary theatre practice. Areas of exploration include such topics as genre studies, text-based theatrical movements, and script analysis techniques for theatre practitioners. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3710 THEATRE HISTORY, THEORY AND CRITICISM II-BODY (3) LEC. 2, LST. 2. An examination of the history, literature, and theory of the theatre from prehistory to the present with an emphasis on the human body as a broad category for understanding a variety of issues and topics relevant to contemporary theatre practice. Areas of exploration include such topics as historical and theoretical perceptions of the social status of the actor, the actor's body as a medium of representation, and theatrical representation, and theatrical representations of gender and ethnicity. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3720 THEATRE HISTORY, THEORY AND CRITICISM III-SPACE (3) LEC. 2, LST. 2. An examination of the history, literature, and theory of the theatre from prehistory to the present with an emphasis on theatrical space as a broad category for understanding a variety of issues and topics relevant to contemporary theatre practice. Areas of exploration include ritual landscapes as they pertain to the origin of drama, the development of the western playhouse, the avant-garde reconceptualization of theatre space, and the development of such spatially oriented American institutions such as Broadway and regional theatre. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3730 MUSIC THEATRE HISTORY (3) LEC. 3. Exploration of music theatre literature, performances, historical, analytical and critical trends from the early 20th century to the present day. Areas of exploration include music theatre as a work of art with unique conversations of aesthetics and form; as an entertainment media that was shaped by its historical and cultural context; and as a viable performance form for the 21st century. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3740 COSTUME HISTORY (3) LEC. 3. History of Western costume and its uses in the theatre from ancient times to the present. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3840 INTERMEDIATE DANCE TECHNIQUES I (3) LEC. 1, LST. 3. Pr., THEA 2840. Intermediate level dance technique and theory, with an emphasis on performance qualities including work on alignment, strength, flexibility, rhythm, musicality, and dynamics, as well as the study of select contemporary choreographers. Intermediate I and II need not be taken in sequence. Or departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 6 credit hours.

THEA 3850 INTERMEDIATE DANCE TECHNIQUES II (3) LEC. 1, LST. 3. Pr., THEA 3840. Further exploration into intermediate level dance technique and theory, with emphasis on aesthetics and contemporary topics in dance. Intermediate I and II need not be taken in sequence. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 6 credit hours.

THEA 3860 MOVEMENT FOR THE ACTOR (3) STU. 4. Introduction to the basic concepts of movement as it relates to the actor. Students will find integrative ways of connecting the body to text and space. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3910 PRODUCTION PRACTICUM III (1) STU. 4. Experience in the design/technical and management areas of production. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 2 credit hours.

THEA 3940 APPLIED THEATRE II: ACTING (1) STU. 4. Intensive applied work for students cast in AU Theatre productions. Prerequisites: Cast in AU Theatre production. Course may be repeated for a maximum of 4 credit hours.

THEA 3950 DIRECTING SEMINAR (3) LEC. 2, LST. 2. Pr., THEA 2120 and THEA 3700. Study of fundamental skills and collaborative processes needed to direct a piece of live theatre, including blocking, script analysis, research methods, approaches to casting, and rehearsal techniques. Prerequisites: Junior standing or above or departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 3960 DRAMATURGY SEMINAR (3) LEC. 3. Study of fundamental skills and collaborative processes needed to dramaturg a piece of live theatre including both production and new play dramaturgy, critical analysis, research, presentations, and performance. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 4150 BFA PERFORMANCE STUDIO III (4) LEC. 3, LST. 5. Pr., THEA 3160. Professional preparation with particular focus on individual rehearsal and performance techniques covering a broad spectrum of periods and styles geared toward graduate acting program placement and professional employment. Theatre majors who do not earn a grade of "C" or higher must re-audition for the BFA performance program and repeat THEA 3150, 3160, and 4150.

THEA 4160 BFA PERFORMANCE STUDIO IV (4) LEC. 3, LST. 5. Pr., THEA 4150. Special problems and topics in performance. Intensive work integrating and applying acting, voice, and movement techniques in an ensemble capstone recital of work in an adjudicated public performance. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 4420 SCENE DESIGN II (3) LEC. 2, LST. 2. Pr., THEA 3410. Advanced course in theory and practice of scenic and lighting design for theatre. Emphasis on experimental and non-traditional staging in a variety of space. Or departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 4450 DRAFTING FOR THE THEATRE II (3) LEC. 2, LST. 2. Pr., THEA 3450. A comprehensive study of computer and digital techniques used in the graphic representation of stage scenery, equipment, and properties design. Theater majors who do not earn a grade of "C" or higher must repeat this course.

THEA 4570 DANCE LAB 4 - BALLET (1) LAB. 4.5. Pr., THEA 3570. Advanced studio training in ballet technique. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

THEA 4650 ADVANCED STAGE MAKEUP (3) LEC. 1, LST. 3. Pr., THEA 2650. Comprehensive study of specialized makeup: film, television, mask making, prosthesis, facial hair design, and wig making. Or departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 4670 DANCE LAB 4 - JAZZ (1) LAB. 3. Pr., THEA 3670. Advanced studio training in Jazz technique. Departmental approval. Course may be repeated for a maximum of 2 credit hours.

THEA 4750 PLAYWRITING (3) LEC. 3. Cover the principles of play construction, assignment of playwriting exercises, and the completion of a one-act play. Theater majors who do not earn a grade of "C" or higher must repeat this course.

THEA 4810 THEATRE PRODUCTION II (3-6) STU. A concentrated workshop experience in all aspects of theatre production through participation in rehearsal and performance. Course may be repeated for a maximum of 12 credit hours.

THEA 4820 SUMMER REPERTORY THEATRE COMPANY II (3-6) STU. Intensive and concentrated study of production skills and techniques and studio/laboratory experiences. Course may be repeated for a maximum of 12 credit hours.

THEA 4840 ADVANCED DANCE TECHNIQUES (3) LEC. 1, LST. 3. Pr., THEA 3850. Intensive study of advanced dance techniques in theory and practice. Course often serves as a training and preparation for public performance. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 12 credit hours.

THEA 4910 PRODUCTION PRACTICUM IV (1-4) STU. Pr., THEA 3910. Leadership experience in the design/technical and management areas of production. Prerequisite: Admission into the BFA Design/Tech (THDT) or Management (THMN) program and two semesters of THEA 3190 or departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 4920 PROFESSIONAL INTERNSHIP (1-8) INT. Internship with professional or community theatre in the student's field of specialization. Each 10-hour work week equals one hour of credit. Departmental approval. Theater majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 8 credit hours.

THEA 4930 DIRECTED STUDIES (1-3) IND. Directed readings, creative and tutorial projects of interest to the advanced student. Departmental approval. Theater majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 6 credit hours.

THEA 4940 THEATRE SPECIAL PROJECTS (3) AAB/STU. 4. Selected projects related to realizing a theatrical production in public performance. Departmental approval. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 9 credit hours.

THEA 4950 THEATRE LITERATURE AND THEORY SEMINAR (3) LEC. 3. Thorough examination of dramatic literature and theory from a narrow perspective (such as genre, style, era, etc.) designed to give students extensive knowledge in one area of theatre. Theatre students who do not earn a grade of "C" or higher must repeat this course.

THEA 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. Subject areas to be determined between student and Theatre instructor. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 6 credit hours.

THEA 4980 SENIOR CAPSTONE PROJECT (3) LEC. 3. Capstone course to aid senior theatre majors in their transition to the professional world and/or graduate studies. Theatre majors who do not earn a grade of "C" or higher must repeat this course.

THEA 4997 HONORS THESIS (1-6) IND. Pr., Honors College. Final projects of varying natures and in the theatre program. Theatre majors who do not earn a grade of "C" or higher must repeat this course. Course may be repeated for a maximum of 6 credit hours.

Undergraduate Studies - UNDG

Courses

UNDG 4900 CLEARING FOR UNDERGRADUATE GRADUATION (0) LEC. 2.

University Courses UNIV

Courses

UNIV 0110 IEP TERM I GRAMMAR/WRITING (0) LEC. 2. Administrative approval required.

UNIV 0120 IEP TERM I READING/VOCABULARY (0) LEC. 2. Administrative approval required.

UNIV 0130 IEP TERM I LISTENING/SPEAKING (0) LEC. 2. Administrative approval required.

UNIV 0210 IEP TERM II GRAMMAR/WRITING (0) LEC. 2. Administrative approval required.

UNIV 0220 IEP TERM II READING/VOCABULARY (0) LEC. 2. Administrative approval required.

UNIV 0230 IEP TERM II LISTENING/SPEAKING (0) LEC. 2. Administrative approval required.

UNIV 1000 THE AUBURN EXPERIENCE (1) LEC. 1. Surveys the history of the University, current student resources, and academic programs.

UNIV 1050 SUCCESS STRATEGIES (1) LEC. 1. An introduction to essential academic and personal skills. Designed to familiarize students with university life and academic improvement skills. First-term student, 2.20 or below, or departmental approval.

UNIV 1060 SUCCESS STRATEGIES II (2) LEC. 2. SU. Designed for those in academic jeopardy, this course assists students in identifying issues impacting academic success and developing strategies to affect positive change. Must have below a 2.0 GPA.

UNIV 1100 FIRST YEAR SEMINAR (1-2) LEC/SEM. Introduce a topic of interest with contemporary importance to beginning college students. Course may be repeated for a maximum of 4 credit hours.

UNIV 1150 SPECIAL TOPICS WITH LEARNING STRATEGIES (1-2) LEC. This course offers first-year students an opportunity to explore a topical area of interest while integrating related study skills.

UNIV 2000 FOUNDATIONS OF LEADERSHIP (3) LEC. 2. LAB. 1. Introductory course for students pursuing the Leadership Minor.

UNIV 2190 FOUNDATIONS OF INTERDISCIPLINARY UNIVERSITY STUDIES (3) LEC. 3. Pr., (P/C, ENGL 1120 or P/C, ENGL 1127). Introductory course to the theories and approaches for Interdisciplinary Degree seeking majors. Students will work alongside academic and career advisors to produce an approved plan of study for Interdisciplinary coursework to be completed.

UNIV 2300 ABROAD TRANSFER-UG (0) AAB/IND. Completion of Office of International Programs-Auburn Abroad-Transfer application and Study Abroad Transfer Credit Form. Full time placeholder. Allows undergraduate students to obtain financial aid, some scholarships requires individual scholarship source approval).

UNIV 2710 THE HUMAN ODYSSEY I (3) LEC. 3. History Core. Examines the human endeavor from pre-history through the 17th century by exploring connections between the sciences and humanities.

UNIV 2720 THE HUMAN ODYSSEY II (3) LEC. 3. History Core. Examines the human endeavor from the 18th century through the present by exploring connections between the sciences and humanities.

UNIV 2727 HONORS HUMAN ODYSSEY II (3) LEC. 3. Pr., Honors College. History Core. Examines the human endeavor from the 18th century through the present by exploring connections between the sciences and humanities.

UNIV 2940 AUBURN ABROAD (0) AAB. Pr., 2.25 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

UNIV 2945 AUBURN ABROAD (0) FLD. Pr., 2.25 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

UNIV 2960 SCHOOL OF RECORD TRANSIENT COURSE (0) AAB/FLD. Must be Auburn transient student. Auburn University is the "School of Record" for transient students seeking academic credit for international programs provided by independent vendors. Course content will vary by individual program.

UNIV 3000 AUBURN EXCHANGE_UNDERGRADUATE (0-12) IND. Office of International Programs - Auburn Abroad approval and approval of individual department sponsoring the exchange program. Full time 12 hour placeholder course for Undergraduate Exchange Students.

UNIV 3510 EUROPEAN ODYSSEY (3) FLD. 2. Summer study-abroad program in Rome, Florence, Paris, London, Edinburgh; through visits to churches, historic sites, contemporary buildings, museums, galleries, parks, piazzas, rivers, trains, restaurants, theatres and stores, students will research selected aspects of Western mythology and religion, Roman Empire, society and culture, art and architecture, Renaissance, Enlightenment and Reformation, and industrial and scientific revolutions.

UNIV 3517 HONORS EUROPEAN ODYSSEY (3) FLD. 2. Summer study-abroad program in Rome, Florence, Paris, London, Edinburgh; through visits to churches, historic sites, contemporary buildings, museums, galleries, parks, piazzas, rivers, trains, restaurants, theatres and stores, students will research selected aspects of Western mythology and religion, Roman Empire, society and culture, art and architecture, Renaissance, Enlightenment and Reformation, and industrial and scientific revolutions.

UNIV 4000 LEADERSHIP IN PRACTICE (3) LEC. 3. Capstone course in interdisciplinary leadership minor.

UNIV 4900 GENERIC EXTERNAL TRANSFER CREDIT (.67-13.34) LEC. 2. Course may be repeated for a maximum of 13.34 credit hours.

UNIV 4920 CURRICULAR PRACTICAL TRAINING (0) PRA. For international students and scholars on U.S. OS EV approved Academic Training. Office of International Education authorized enrollments only.

UNIV 4930 INTERDISCIPLINARY CAPSTONE EXPERIENCE (3) LEC. 3. Pr., UNIV 2190. Capstone course designed to apply Interdisciplinary Degree Coursework to a senior thesis project. Requires 90 credit hours. Open only to Interdisciplinary Studies majors.

UNIV 4940 AUBURN ABROAD (0) AAB. Pr., 2.25 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

UNIV 4945 AUBURN ABROAD (0) AAB/FLD. Pr., 2.25 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

UNIV 4980 INTERDISCIPLINARY CAPSTONE EXPERIENCE (3) LEC. 3. SU. Pr., UNIV 2190. Capstone course designed to apply Interdisciplinary Degree Coursework to a service learning, or internship project. Requires 90 credit hours. Open only to Interdisciplinary Studies majors.

UNIV 4AA0 UNIVERSITY GRADUATION (0) LEC.

UNIV 5940 AUBURN ABROAD (0) AAB. Pr., 3.00 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

UNIV 5945 AUBURN ABROAD (0) AAB/FLD. Pr., 3.00 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

UNIV 6000 AUBURN EXCHANGE GRADUATE (0-9) LEC. 9. Full time 9 hours placeholder course for Graduate Exchange Students. Office of International Programs - Auburn Abroad approval and approval individual department sponsoring the exchange program.

UNIV 6300 ABROAD TRANSFER-GR (0) AAB/IND. Completion of Office of International Programs-Auburn Abroad-Transfer application and Study Abroad Transfer Credit Form. Full time placeholder, zero credit hours. Allows graduate students to obtain financial aid, some scholarships (requires individual scholarship source approval).

UNIV 7000 INTERNATIONAL GRADUATE EXPERIENCE (0) LEC. 1. SU. This course is designed to provide new international graduate students with an orientation to academic and local culture in the United States.

UNIV 7010 RURAL STUDIO CERTIFICATE (0) LEC. 3.

UNIV 7020 RURAL STUDIO CERTIFICATE I (0) LEC. 3.

UNIV 7030 RURAL STUDIO CERTIFICATE II (0) LEC. 3.

UNIV 7940 AUBURN ABROAD (0) AAB. Pr., 3.00 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

UNIV 7945 AUBURN ABROAD (0) AAB/FLD. Pr., 3.00 GPA. Student must meet Auburn Abroad plus any individual program requirements for all study abroad programs (offered by AU or others); an Auburn Abroad application must be submitted and approved by OIE prior to participation/departure.

VM-Biomedical Sciences VBMS

Courses

VBMS 2100 INTRODUCTION TO PUBLIC HEALTH (3) LEC. 3. Lecture and discussion of historic advances in public health leading to discussion of diseases affecting the health of people in Alabama today.

VBMS 3010 INTRODUCTION TO EPIDEMIOLOGY (3) LEC. 3. Principles of epidemiology, with emphasis on approaches for prevention/control of diseases of humans and animals. Broad applications of studies of populations will be stressed.

VBMS 4830 GLOBAL AND COMPARATIVE HEALTH SYSTEMS (3) LEC. 3. Different national approaches to providing health care for the population will be compared to the US system. Departmental approval.

VBMS 4980 UNDERGRADUATE RESEARCH (1-3) RES. Directed, supervised undergraduate research in veterinary biomedical sciences (VBMS). Course may be repeated for a maximum of 9 credit hours.

VBMS 4987 HONORS RESEARCH (1-3) RES. Pr., Honors College. Supervised undergraduate research in veterinary biomedical science. May count either VBMS 4987 or VBMS 4997. Course may be repeated for a maximum of 9 credit hours.

VBMS 4997 HONORS THESIS (1-3) RES. Pr., Honors College. Undergraduate honors thesis development in veterinary biomedical science. May Count either VBMS 4987 or VBMS 4997. Course may be repeated for a maximum of 9 credit hours.

VBMS 6111 VETERINARY ANATOMY I (4) LAB. 12. Gross anatomy of the dog and cat including skeletal and muscular systems, neck, thorax, limbs, abdomen, pelvis, head, and nervous system. Credit will not be given for VMED 5111 and VBMS 6111. Departmental approval.

VBMS 7000 NEUROANATOMY (5) LEC. 3. LAB. 4. Functional morphology of nervous system from input/output through the long systems; limbic relations to endocrine and autonomic nervous system. Comparative among primates and domestic animals. Departmental approval.

VBMS 7010 PATHWAYS TO SUCCESSFUL RESEARCH (1) LEC. 1. An introduction to topics pertinent to performance of a successful graduate program and in the conduction of responsible research.

VBMS 7020 MICROSCOPIC ANATOMY I (3) LEC. 1. LAB. 4. A detailed study of and preparation of the basic tissues. Light microscopy and electron micrograph preparations are used to describe and interpret morphology. Departmental approval.

VBMS 7030 MICROSCOPIC ANATOMY II (3) LEC. 1. LAB. 4. Light microscopy and electron microscopy detailed study of the cardiovascular, hemopoietic, digestive, urinary and respiratory systems of domestic animals. Departmental approval.

VBMS 7040 ADVANCED PHYSIOLOGY OF REPRODUCTION (3) LEC. 3. Pr., ANSC 3600 and BIOL 6240 or VBMS 7150. Departmental approval. Developmental, physiological, endocrinological, cellular and molecular mechanisms regulating reproduction, with emphasis on mammalian systems.

VBMS 7050 DEVELOPMENTAL NEUROBIOLOGY (3) LEC. 3. Overview of the development of the nervous system. Emphasis will be directed towards understanding sensory systems, development, plasticity and function. Departmental approval.

VBMS 7060 FUNGAL TOXINS (2) LEC. 2. Biology and epidemiology of fungi involved with diseases caused by fungal toxins. Detection, adverse health effects in diverse animal species, regulatory aspects, and control strategies. Departmental approval.

VBMS 7070 ENDOCRINOLOGY (4) LEC. 4. Pr., BCHE 7200 and BCHE 7260 and BIOL 6600. Molecular and cellular endocrinology and physiological regulation of hormone synthesis, secretion, and action in mammalian species. Emphasis will be placed on metabolic regulatory hormones. Or departmental approval.

VBMS 7080 MOLECULAR ENDOCRINOLOGY (2) LEC. 2. Pr., VBMS 7070. Examination of the literature of hormonal synthesis, secretion and mechanism of action with emphasis on receptors, second messenger systems, and gene regulation. Departmental approval.

VBMS 7090 CLINICAL PHARMACOLOGY (3) LEC. 3. The actions and effects of drugs on human beings. Acceptable courses in biochemistry and physiology; departmental approval.

VBMS 7110 ADVANCED CARDIOVASCULAR PHYSIOLOGY (5) LEC. 5. Cellular and molecular regulation of cardiovascular function. Departmental approval.

VBMS 7120 MEMBRANE PHYSIOLOGY (3) LEC. 2. LAB. 3. The classic and modern aspects of biological membranes. Labs include patch clamp, reconstruction of ion channels in bilayers, Langmuir-Blodgett techniques, and other methods. Departmental approval.

VBMS 7130 VETERINARY MEDICINE DIAGNOSTIC ULTRASONOGRAPHY (3) LEC. 3. Pr., VMED 5120 and VMED 5121. The principles and practice of veterinary medical diagnostic ultrasonography as they are utilized in evaluating normal and abnormal anatomy. All animals are used in this course. Veterinary anatomy and/or DVM degree.

VBMS 7140 PHYSIOLOGY I (5) LEC. 5. Cellular, Cardiovascular, Renal and Respiratory Physiology. Departmental approval.

VBMS 7150 PHYSIOLOGY II (4) LEC. 4. Pr., VBMS 7140. Gastrointestinal Physiology, Metabolism, Endocrinology, and Reproductive Physiology. A Departmental approval.

VBMS 7160 NEUROSCIENCE (3) LEC. 3. An overview of neuroscience on the subcellular, cellular and system levels. Departmental approval.

VBMS 7170 ANATOMY, PHYSIOLOGY, PHARMACOLOGY SEMINAR (1) SEM. 1. Required of all graduate students in Anatomy, Physiology, and Pharmacology.

VBMS 7180 RECEPTOROLOGY (4) LEC. 4. Pr., VBMS 7070.

VBMS 7210 RADIATION BIOLOGY (4) LEC. 4. Exploration of biological, physical, and chemical basis of radiotherapy with emphasis on the biological effects of ionizing radiation at the cellular and molecular level. Effects of irradiation on the tumor, normal tissues, and the patient will be addressed. DVM degree; Residency in Radiation Oncology or Radiology or Small Animal Oncology and registered in the Graduate School.

VBMS 7240 ADVANCED SCIENCE OF CANINE AND EQUINE LOCOMOTION (3) LEC. 3. Attendees will learn about the science of biomechanics, muscle physiology and how they apply to locomotion or the athletics and working dog and horse

VBMS 7250 NORMAL RADIOLOGICAL ANATOMY (3) LEC. 3. A detailed study of the normal structure, size and position of the various organs of the cat, dog, horse, cow, and other veterinary species as they appear on plain and contrast radiographs. DVM Degree, acceptance in an established residency program.

VBMS 7260 ADVANCED RADIOLOGY (3-5) LEC. Detailed study of concepts and techniques of all imaging procedures. For graduate students and residents in DCS program or DVM or equivalent.

VBMS 7270 RADIOLOGICAL INTERPRETATIONS (1-3) LEC. The interpretation of various diagnostic imaging modalities used in veterinary medicine and their applications in the diagnostic work-up of clinical cases presenting to the College of Veterinary Medicine. DVM Degree.

VBMS 7280 PHYSICS OF DIAGNOSTIC IMAGING (3) LEC. 3. Principles of physics related to the imaging modalities of diagnostic radiology, ultrasonography, magnetic resonance imaging, scintigraphy, computed tomography, and radiation therapy. Students will study physics at the atomic level but must also develop an understanding of construction, function, and hazards of modern imaging equipment. DVM Degree.

VBMS 7290 GRADUATE SEMINAR (1) SEM. 1. A mandatory graded seminar presentation, held in conjunction with the VBMS seminar series, presenting the resident student's individual Master of Science degree research topic including pertinent review, hypothesis, materials, results, and discussion of findings. Departmental approval.

VBMS 7340 LARGE ANIMAL SURGERY AND MEDICINE SEMINAR (1) SEM. 1. Seminar required of all graduate students in large animal surgery and medicine. Meets at scheduled intervals each year. Departmental approval.

VBMS 7350 ADVANCED LARGE ANIMAL UROGENITAL SURGERY (5) LEC. 3. LAB. 6. Research in surgery. Advanced techniques for urogenital surgical procedures in large domestic animals. Departmental approval.

VBMS 7360 ADVANCED LARGE ANIMAL SOFT TISSUE SURGERY (5) LEC. 4. LAB. 2. Research in surgery. Advanced techniques for soft tissue surgical procedures in large domestic animals. Departmental approval.

VBMS 7370 ADVANCED LARGE ANIMAL ORTHOPEDIC SURGERY (5) LEC. 3. LAB. 2. Research and advanced techniques for orthopedic surgical procedures in large domestic animals.

VBMS 7380 ADVANCED FOOD ANIMAL MEDICINE (3) LEC. 3. In-depth study of food animal medical diseases of all body systems with emphasis on pathophysiologic mechanisms. Departmental approval; DVM degree.

VBMS 7390 ADVANCED EQUINE MEDICINE (3) LEC. 3. Detailed etiology, symptoms, pathogenesis, treatment, and prevention of the medical diseases affecting the various systems and organs of the equine, bovine, ovine, and porcine species. Departmental approval.

VBMS 7400 GYNECOLOGY OF LARGE DOMESTIC ANIMALS (3) LEC. 3. Diseases and problems of the reproductive system in the female domestic animals. Normal and abnormal conditions of various species are covered. Departmental approval; DVM degree.

VBMS 7410 ANDROLOGY OF LARGE DOMESTIC ANIMALS (3) LEC. 3. Diseases and problems of the reproductive system in male domestic animals. Departmental approval; DVM degree.

VBMS 7420 ADVANCED VETERINARY ANESTHESIOLOGY (4) LEC. 4. Departmental approval.

VBMS 7430 HEALTH MAINTENANCE OF FOOD ANIMALS (3) LEC. 5. Research in production medicine. Principles of production medicine to enhance animal health and productivity. Departmental approval.

VBMS 7440 ADVANCED EQUINE ARTHROSCOPIC SURGERY (5) LEC. 3. LAB. 6. Research in surgery. Advanced techniques for arthroscopic surgical procedures in the horse. Departmental approval; DVM degree.

VBMS 7450 SELECTED TOPICS IN GRADUATE EDUCATION RESEARCH (1) LEC. 1. SU. Overview of research funding strategies, grant preparation, transfer of research technology and patents, research ethics, etc. Departmental approval.

VBMS 7460 BACTERIAL PATHOGENESIS (3) LEC. 3. Pr., VBMS 7510 or BIOL 4520. Molecular and cellular basis of virulence of bacterial pathogens of animals. Departmental approval.

VBMS 7470 ADVANCED EPIDEMIOLOGY (3) LEC. 3. Advanced epidemiological techniques and their application to disease research, clinical retrospective and prospective studies, and disease outbreak investigation. Introductory statistics course or departmental approval.

VBMS 7480 METHODS IN IMMUNOLOGY (5) LEC. 1. LAB. 8. Theoretical concepts underlying immunological methods combined with practical hands-on immunological experimentation focused on application to research in the biological sciences. Departmental approval.

VBMS 7490 DIAGNOSTIC TECHNIQUES IN VETERINARY MICROBIOLOGY (4) LEC. 1. LAB. 9. Techniques used in modern diagnostic microbiology laboratories. Departmental approval.

VBMS 7500 CELLULAR AND MOLECULAR IMMUNOLOGY (3) LEC. Pr., BIOL 6500. Current literature in immunobiology, emphasis on cellular/ biochemical/genetic basis of immune response. Departmental approval.

VBMS 7510 QUALITY SYSTEMS IN HEALTH SCIENCES (3) LEC. 3. Overview of regulations, standards, and foundational principles for quality systems and processes illuminating the application to health sciences.

VBMS 7520 EUKARYOTIC MOLECULAR BIOLOGY (3) LEC. 3. Genetic mechanisms by which eukaryotic cells replicate, communicate and differentiate. Current literature will be used extensively.

VBMS 7530 EXPERIMENTAL TECHNIQUES IN MOLECULAR AND CELL BIOLOGY (3) LEC. 2. LAB. 6. Nucleic acid detection/ amplification/sequencing, protein/ antibody chemistry, flow cytometry, photo/electron microscopy fluorochromes, radioisotopes, centrifugation, cell/embryo culture.

VBMS 7540 CURRENT TOPICS IN MOLECULAR VIROLOGY (3) LEC. 3. Pr., VBMS 7520 and BIOL 6260. Viral gene expression and evasion of host defense mechanisms. Departmental approval.

VBMS 7550 PATHOLOGY (1-3) LEC. SU. Diagnostic interpretation of lesions and test results. Special topics or current issues in pathology to meet the particular needs of students. DVM degree or equivalent; Departmental approval. Course may be repeated for a maximum of 3 credit hours.

VBMS 7560 GENERAL PATHOLOGY (4) LEC. 3. LAB. 3. Fundamental alterations of disease. Departmental approval; Satisfactory courses in histology and physiology,

VBMS 7570 DIAGNOSTIC PATHOLOGY (1-3) LEC. SU. Diagnosis of animal diseases using necropsy procedures and histopathology. Required every semester of all graduate students and residents in pathology. DVM degree. Course may be repeated for a maximum of 3 credit hours.

VBMS 7580 SURGICAL PATHOLOGY (1-3) LEC. SU. Histopathologic diagnosis of surgical biopsy specimens. Required every semester for all graduate students and residents in pathology. DVM degree. Course may be repeated for a maximum of 3 credit hours.

VBMS 7590 AVIAN PATHOLOGY (4) LEC. 4. Comparative avian pathology emphasizing cause, pathogenesis and lesions associated with diseases; differential diagnosis and diagnostic procedures to confirm a diagnosis. Departmental approval.

VBMS 7600 ADVANCED CLINICAL PATHOLOGY I (3) LEC. 3. Pr., VMED 5230. The lymphohematopoietic system. Normal components and evaluation of disease states. Departmental approval.

VBMS 7610 ADVANCED CLINICAL PATHOLOGY II (3) LEC. 3. Pr., VBMS 5230. Laboratory evaluation of organ function; disease pattern recognition. Departmental approval.

VBMS 7620 DIAGNOSTIC ONCOLOGY (3) LEC. 3. Pr., VMED 5220. Principles of gross and microscopic interpretation of animal neoplasms using basic and specialized techniques. Departmental approval.

VBMS 7630 BASIC AND CLINICAL ONCOLOGY (3) LEC. 3. Comparative aspects of the etiology, pathophysiology, diagnosis and treatment of cancer.

VBMS 7640 MECHANISMS OF DISEASE (3) LEC. 3. Pr., VMED 5220. VMED 5220 or equivalent, departmental approval. Disease lesions, processes, disorders; morphologic, molecular and genetic aspects of disease processes. Departmental approval.

VBMS 7650 VETERINARY PROTOZOLOGY AND ENTOMOLOGY (3) LEC. 3. Current topics in immunology, physiology, molecular biology, pathogenicity, etc. of selected protozoal and arthropod parasites. Departmental approval.

VBMS 7660 VETERINARY HELMINTHOLOGY (3) LEC. 3. Current topics in immunology, physiology, biochemistry, molecular biology, epidemiology, and pathogenicity of selected helminth parasites. Departmental approval.

VBMS 7670 PATHOLOGY PARASITIC DISEASES (3) LEC. 2. LAB. 2. Pr., VBMS 7560. Gross and microscopic pathology of parasitic diseases of veterinary importance. Departmental approval.

VBMS 7680 PATHOLOGY SEMINAR (1) LEC. 1. Pr., VMED 5220. Weekly conference to discuss gross and histologic pathology in animal tissues. Departmental approval.

VBMS 7690 READINGS IN IMMUNOLOGY AND INFECTIOUS DISEASE (1) LEC. 1. SU. Pr., BIOL 6500 or VBMS 7500. To familiarize students with current scientific literature in immunology and the methods employed. Or equivalent.

VBMS 7700 COMBINATORIAL BIOCHEMISTRY AND PHAGE DISPLAY (4) LEC. 1. LAB. 6. In-depth study of combinatorial biochemistry and phage display as a tool for development of new drugs, vaccines and diagnostics for veterinary medicine.

VBMS 7710 ADVANCED EUKARYOTIC MOLECULAR BIOLOGY (3) LEC. 3. Pr., VBMS 7520. Current literature in molecular mechanisms of information transfer and regulation in eukaryotes.

VBMS 7720 DEVELOPMENTAL MOLECULAR BIOLOGY (3) LEC. 3. Pr., VBMS 7520. Genetic mechanisms by which eukaryotes differentiate from single cells to complex multicellular organisms will be covered. Important examples of biomedical dysfunction will be used to illustrate developmental pathways. Current literature will be used extensively.

VBMS 7730 APPLIED CYTOLOGY (2) LEC. 2. Systematic review of normal and abnormal cytologic findings in veterinary species. Participation in a residency training program at the Auburn University College of Veterinary Medicine.

VBMS 7740 CLINICAL VETERINARY MICROBIOLOGY (1) LEC. 1. SU. Directed discussion group reviewing the current, clinical scientific literature in veterinary microbiology and veterinary infectious disease research. Course may be repeated for a maximum of 5 credit hours.

VBMS 7750 GRADUATE COLLOQUIUM IN VETERINARY CLINICAL SCIENCE (1) CLN. 1. Forum to present topics relevant to the students clinical and research interests. This a mandatory seminar for graduate students in the Department of Clinical Science. DVM degree or departmental approval. Course may be repeated for a maximum of 5 credit hours.

VBMS 7760 ADVANCED NEUROSURGERY (4) LEC. 2. LAB. 6. Applied anatomy, physiology, physical and radiographic diagnosis and surgical correction of lesions affecting the nervous system of small pet animals.

VBMS 7770 ADVANCED SMALL ANIMAL GENERAL SURGERY (3) LEC. 2. LAB. 3. Application of critical thinking skills to perioperative plans and tasks. DVM or VMD degree, or equivalent.

VBMS 7780 VETERINARY WOUND MANAGEMENT AND RECONSTRUCTIVE SURGERY (4) LEC. 2. LAB. 2. Techniques in veterinary wound management and reconstructive surgery in large and small animals. DVM degree or equivalent.

VBMS 7790 SMALL ANIMAL ORTHOPEDICS (5) LEC. 5. Review of orthopedic diseases in small animals, interactive review of recent literature and advanced laboratory sessions intended for residents in small animal surgery. DVM degree or equivalent.

VBMS 7800 ADVANCED SMALL ANIMAL NEUROLOGY (3) LEC. 3. Advanced study of neurodiagnostics and non-surgical therapy of neurological disorders in small domestic animals.

VBMS 7810 ADVANCED SMALL ANIMAL MEDICINE I (3-5) LEC. Special study of the causes, methods of diagnosis, treatment and control of non-surgical urogenital diseases of small animals. DVM degree; Departmental approval. Course may be repeated for a maximum of 5 credit hours.

VBMS 7820 ADVANCED SMALL ANIMAL MEDICINE II (3-5) LEC. 3. Special study of the causes, methods of diagnosis, treatment and control of non-surgical gastrointestinal diseases of small animals. DVM degree; Departmental approval. Course may be repeated for a maximum of 5 credit hours.

VBMS 7830 ADVANCED SMALL ANIMAL MEDICINE III (3-5) LEC. 3. Special study of the causes, methods of diagnosis, treatment and control of non-surgical cardiovascular and respiratory diseases of small animals. DVM degree; Departmental approval. Course may be repeated for a maximum of 5 credit hours.

VBMS 7840 ADVANCED SMALL ANIMAL MEDICINE IV (3-5) LEC. Molecular biology lectures and techniques related to diagnostic and research application to clinical problems in small animal veterinary medicine. DVM degree; Departmental approval. Course may be repeated for a maximum of 5 credit hours.

VBMS 7850 ADVANCED VETERINARY MEDICAL SPECIALTY TRAINING (1-4) LEC. 1. LAB. 2. SU. Course may be repeated for a maximum of 6 credit hours.

VBMS 7870 ADVANCED VETERINARY OPHTHALMOLOGY: OPHTHALMIC MEDICINE (3) LEC. 3. Advanced ophthalmology with emphasis on diagnosis, pathophysiology and treatment of ocular diseases of domestic animals. DVM degree or equivalent.

VBMS 7880 ADVANCED VETERINARY OPHTHALMOLOGY: OPHTHALMIC MEDICINE (3) LEC. 1. LAB. 6. Pr., VBMS 7870. Advanced ophthalmology with emphasis on ophthalmic surgery.

VBMS 7890 ADVANCED VETERINARY OPHTHALMOLOGY: OPHTHALMIC BASIC SCIENCES (3) LEC. 3. Advanced ophthalmology with emphasis on diagnosis, pathophysiology and treatment of ocular diseases of domestic animals. DVM degree or equivalent.

VBMS 7910 ADVANCED EQUINE CRITICAL CARE I (2) LEC. 2. Introduce students to the mechanisms of disease, state of the art knowledge/procedures & treatment of conditions relevant to the critical equine patient.

VBMS 7920 ADVANCED EQUINE CRITICAL CARE II (2) LEC. 2. Introduce students to the mechanisms of disease, state of the art knowledge/procedures & treatment of conditions relevant to the critical equine patient.

VBMS 7950 GRADUATE SEMINARS IN VETERINARY CLINICAL SCIENCES (1) SEM. 1. SU. Presentation of thesis research. DVM degree or departmental approval.

VBMS 7970 RESEARCH PROBLEMS IN BIOMEDICAL SCIENCES (1-5) RES. Research problems for graduate students, under supervision of faculty, in variety of specialized disciplines related to the biomedical sciences. Faculty approval. Course may be repeated for a maximum of 15 credit hours.

VBMS 7980 NON-THESIS PROJECT (1-3) LEC. 3. SU. Non-thesis project, to be determined by faculty advisor and student's graduate advisory committee. DVM degree or departmental approval.

VBMS 7990 RESEARCH AND THESIS IN BIOMEDICAL SCIENCES (1-10) MST. Credit to be arranged. Course may be repeated with change in topics.

VBMS 8360 ADVANCED EQUINE MEDICINE I: GI DISEASE (2) LEC. 2. Advanced topics in equine gastrointestinal disease are discussed. Topics include pathophysiology, pharmacology, and specific therapy of GI disease in horses. Graduate standing in Biomedical Sciences, College of Veterinary Medicine. Must have DVM or equivalent.

VBMS 8370 ADVANCED EQUINE MEDICINE II: RENAL/ENDOCRINE (2) LEC. 2. Advanced topics in equine renal and endocrine disease are discussed. Topics include pathophysiology, pharmacology, and specific therapies. Graduate standing in Biomedical Sciences, College Veterinary Medicine. Must have DVM or equivalent.

VBMS 8380 ADVANCED EQUINE MEDICINE III: NEUROMUSCULAR (2) LEC. 2. Advanced topics in equine neuromuscular disease are discussed. Topics include pathophysiology, pharmacology, and specific therapies. Graduate standing in Biomedical Sciences, College Veterinary Medicine. Must have DVM or equivalent.

VBMS 8390 ADVANCED EQUINE MEDICINE IV: CARDIORESPIRATORY (2) LEC. 2. Advanced topics in equine cardiorespiratory disease are discussed. Topics include pathophysiology, pharmacology and specific therapies. Graduate standing in Biomedical Sciences, College Veterinary Medicine. Must have DVM or equivalent.

VBMS 8950 BIOMEDICAL SCIENCES SEMINAR (1) SEM. 1. SU. Recent advances in biochemistry, cell biology and molecular biology will be critically presented and discussed by graduate faculty and students.

VBMS 8990 RESEARCH AND DISSERTATION (1-10) DSR. Course may be repeated with change in topics.

Veterinary Medicine - VMED

Courses

VMED 5000 ORIENTATION TO VETERINARY MEDICINE (0) SEM. 1. SU. Overview of organized veterinary medicine, history of the profession, professional responsibilities and privileges, and career opportunities within the profession.

VMED 5010 VETERINARY MEDICAL ETHICS (1) LEC. 1. Ethical issues confronting veterinarians in every phase of the profession.

VMED 5012 PROBLEM-SOLVING IN VETERINARY MEDICINE I (1) LEC. 1. SU. Moderator-guided, student-directed solving of problems selected by faculty to reflect integration of course material presently and previously covered in the CVM curriculum.

VMED 5020 VETERINARY MEDICINE AND THE LAW (1) LEC. 1. Laws relating to the veterinary profession, public policies, and government regulations.

VMED 5022 PROBLEM-SOLVING IN VETERINARY MEDICINE II (1) LEC. 1. SU. Moderator-guided, student-directed solving of problems selected by faculty to reflect integration of course material presently and previously covered in the CVM curriculum.

VMED 5030 VETERINARY PUBLIC HEALTH (4) LEC. 4. Zoonoses, principles of epidemiology and food hygiene, role of veterinarian in public health.

VMED 5032 PROBLEM SOLVING IN VETERINARY MEDICINE III (1) LEC. 1. SU. Moderator-guided, student-directed solving of problems selected by faculty to reflect integration of course material presently and previously covered in the CVM curriculum.

VMED 5042 PROBLEM SOLVING IN VETERINARY MEDICINE IV (1) LEC. 1. SU. Moderator-guided, student-directed solving of problems selected by faculty to reflect integration of course material presently and previously covered in the CVM curriculum.

VMED 5052 PROBLEM SOLVING IN VETERINARY MEDICINE V (1) LEC. 1. SU. Moderator-guided, student-directed solving of problems selected by faculty to reflect integration of course material presently and previously covered in the CVM curriculum.

VMED 5110 PHYSIOLOGY I (5) LEC. 5. Cellular, Cardiovascular, Renal, and Respiratory Physiology.

VMED 5111 VETERINARY ANATOMY I (SMALL ANIMAL) (4) LAB. 12. Basic concepts of body structure and small animal gross anatomy with veterinary medical applications. Credit will not be given for both VMED 5111 and VBMS 6111.

VMED 5120 PHYSIOLOGY II (4) LEC. 4. Gastrointestinal Physiology, Metabolism, Endocrinology, and Reproductive Physiology.

VMED 5121 VETERINARY ANATOMY II (3) LAB. 9. In-depth study of the gross anatomy of the ox, horse, and minor species with inclusion of clinical relevance.

VMED 5130 CELL PHYSIOLOGY AND MOLECULAR GENETICS (2) LEC. 2. Introduction to advanced concepts in the mechanisms regulating cell function and molecular biology and genetics.

VMED 5131 BASIC MICROANATOMY/DOMESTICS ANIMALS (3) LEC. 1. LAB. 4. Functional comparative microstructure of cells, basic tissues, cardiovascular system, urinary system, skeleton and osteogenesis, respiratory system, and blood of domestic animals.

VMED 5141 ORGANOLOGY OF DOMESTIC ANIMALS (2) LAB. 4. Comparative microstructure of the digestive system, lymphoid system, endocrine system, integumentary system, reproductive system, and placentation of domestic animals.

VMED 5150 DIAGNOSTIC IMAGING (2) LEC. 1. LAB. 1. Basic radiographic and ultrasonographic physics; introduction to computed tomography, magnetic resonance imaging, and nuclear imaging.

VMED 5151 VETERINARY NEUROSCIENCES (5) LEC. 4. LAB. 2. Gross and microscopic morphology and physiology of the peripheral and central nervous systems.

VMED 5180 VETERINARY ETHOLOGY (1) LEC. 1. Basic concepts of ethology and other approaches to animal behavior, introduce diagnostic and treatment methods, discuss relevant cases.

VMED 5200 VETERINARY PARASITOLOGY I (3) LEC. 2. LAB. 2. Platyhelminthes, trematodes, and nematodes of domestic animals.

VMED 5210 VETERINARY PARASITOLOGY II (2) LEC. 2. LAB. 2. Arthropods, protozoa, helminths, and acanthocephalans of domestic animals. Parasitocides.

VMED 5220 PRINCIPLES OF VETERINARY PATHOLOGY (3) LEC. 2. LAB. 2. General principles of pathology and mechanisms of disease processes affecting animals.

VMED 5230 VETERINARY CLINICAL PATHOLOGY (3) LEC. 3. Laboratory test principles and results interpretations in evaluation of hematopoietic, coagulation, hepatic, renal, gastrointestinal, acid/base and fluid status of animals.

VMED 5240 PRINCIPLES OF VETERINARY IMMUNOLOGY (3) LEC. 3. Principles underlying the immune system's ability to protect animals from disease and mechanisms by which immune responses contribute to disease.

VMED 5250 PRINCIPLES OF VETERINARY INFECTIOUS DISEASE (4) LEC. 3. LAB. 2. Principles of infectious agents and their pathogenic attributes, infectious diseases of animals, and mechanisms of antimicrobial agents.

VMED 5260 VETERINARY PHARMACOLOGY (3) LEC. 3. Overview of drugs relevant to veterinary practice; pharmacodynamics, pharmacokinetics, clinical application.

VMED 5262 CLINICAL PHARMACOLOGY AND THERAPEUTICS (1) LEC. 1. Use of group based discussion to create therapeutic plan for specific patients with a target disease. Satisfactory advancement into the second of the professional (DVM) program.

VMED 5270 INTRODUCTION TO CYTOLOGY (1) LEC. 1. The principles and practice of evaluation of blood films, cytologic preparations, and urine sediments from various veterinary species.

VMED 5301 PHYSICAL DIAGNOSES OF LARGE AND SMALL ANIMALS (2) LEC. 1. LAB. 2. Basic approach to physical examination of large and small animals.

VMED 5310 INTRODUCTION TO SURGERY (2) LEC. 2. LAB. 0. Current standing in the DVM professional curriculum and completion of the first 3 semesters of the professional program. Introduction to the fundamental principles and techniques of veterinary surgery.

VMED 5311 SURGICAL PRACTICUM (2) PRA. 4. Aseptic technique, instrument handling, suture patterns, surgical ties, anesthetic administration/monitoring, surgical incision/tissue handling, wound closure, postoperative patient management.

VMED 5320 CLINICAL VETERINARY NUTRITION (2) LEC. 2. Nutritional requirements and feeding programs of cats, dogs, horses, cows, sheep, goats, llamas and some exotic pets.

VMED 5330 MULTISPECIES MEDICINE (3) LEC. 3. Cause, pathology, diagnosis, and control of common diseases of poultry, companion birds, small mammal, fish, amphibian, and reptile pets.

VMED 5340 EMERGENCY MEDICINE AND CRITICAL CARE (2) LEC. 2. Emergency presentations, critical care management.

VMED 5350 VETERINARY TOXICOLOGY (3) LEC. 2. LAB. 2. Poisons and poisonous plants affecting large and small animals, chemical properties, signs, lesions, diagnosis, treatment.

VMED 5360 PRODUCTION PREVENTATIVE MEDICINE (3) LEC. 3. Principles of disease prevention and maximization of production application of food safety principles.

VMED 5370 ONCOLOGY (1) LEC. 1. Diagnostic and therapeutic measures used to manage animals with oncologic diseases.

VMED 5380 PHYSICAL DIAGNOSIS II (1) LEC. 1. Continued experience in the performance of routine physical examination in small and large animal species. Satisfactory advancement into the second year of the professional (DVM) program.

VMED 5502 CURRENT TOPICS IN VETERINARY MEDICINE (1) LEC. 1. SU. Emerging topics in veterinary medicine, current literature. Course may be repeated for a maximum of 15 credit hours.

VMED 5510 HEMOLYMPH/INTEGUMENTARY SYSTEM (4) LEC. 4. Diagnosis, treatment and prevention of diseases affecting the integumentary and hemolymphatic systems.

VMED 5520 CARDIOVASCULAR SYSTEM (2) LEC. 2. Pathophysiology, pathologic lesions, radiographic and ultrasonographic lesions, diagnosis, treatment and prevention of diseases affecting the cardiovascular system.

VMED 5530 RESPIRATORY SYSTEM (3) LEC. 3. Pathophysiology, pathologic lesions, radiographic and ultrasonographic lesions, diagnosis, treatment and prevention of diseases affecting the respiratory system.

VMED 5540 ALIMENTARY SYSTEM (5) LEC. 5. Pathophysiology, pathologic lesions, radiographic and ultrasonographic lesions, diagnosis, treatment and prevention of diseases affecting the alimentary system.

VMED 5550 URINARY SYSTEM (2) LEC. 2. Pathophysiology, pathologic lesions, radiographic and ultrasonographic lesions, diagnosis, treatment, and prevention of disease affecting the urinary system.

VMED 5560 ENDOCRINE SYSTEM (2) LEC. 2. Pathophysiology, pathologic lesions, diagnosis, treatment and prevention of diseases of the endocrine system.

VMED 5570 REPRODUCTIVE SYSTEM (5) LEC. 5. Pathophysiology, pathologic lesions, radiographic and ultrasonographic lesions, diagnosis, treatment; and prevention of diseases of the reproductive system.

VMED 5580 NERVOUS SYSTEM (2) LEC. 2. Pathophysiology, pathologic lesions, radiographic and ultrasonographic lesions, diagnosis, treatment, and prevention of diseases affecting the nervous system.

VMED 5590 MUSCULOSKELETAL SYSTEM (3) LEC. 3. Pathophysiology; pathologic, radiographic and ultrasonographic lesions; diagnosis; treatment; and prevention of diseases affecting the musculoskeletal system.

VMED 5601 VETERINARY CLINICAL ROTATIONS (3) LEC. 3. Clinical experiences through various specialty services in the Veterinary Medical Teaching Hospital. Course may be repeated with change in topics.

VMED 5602 RESEARCH PROBLEMS IN BIOMEDICAL SCIENCE (1-10) RES. SU. Research problems in a variety of specialized disciplines for veterinary students and advanced undergraduates. Departmental approval. Course may be repeated for a maximum of 10 credit hours.

VMED 5611 VETERINARY CLINICAL ROTATIONS-ELECTIVES (3) CLN. 3. SU. Clinical experiences through various specialty services in the Veterinary Medical Teaching Hospital. Course may be repeated for a maximum of 9 credit hours.

VMED 5650 CANINE SPORTS MEDICINE AND REHABILITATION (1) LEC. 1. SU. Activities, requirements, and disorders encountered in canine athletes; role of veterinarian in care and rehabilitation; current research.

VMED 5660 LABORATORY ANIMAL MEDICINE (1) LEC. 1. Husbandry, nutrition, handling, and diseases of common laboratory animals.

VMED 5680 POCKET PET MEDICINE (1) LEC. 1. SU. Diseases, treatment, restraint, examination, sample collection in rabbits, Guinea pigs, hamsters, rats, mice, and ferrets.

VMED 5690 REPTILE AND AMPHIBIAN MEDICINE (1) LEC. 1. SU. Diseases, treatment, husbandry, handling, restraint, examination, sample collection in reptiles and amphibians.

VMED 5702 WRITING REINFORCEMENT FOR THE HEALTH PROFESSIONAL (1) LEC. 1. SU. Written and oral presentation of project emphasizing health promotion and disease prevention in the 21st century. Departmental approval.

VMED 5710 PRACTICE MANAGEMENT (1) LEC. 1. SU. Fundamental principles of effective client, personnel, practice and business management for the veterinarian.

VMED 5720 DISASTER MEDICINE FOR VETERINARIANS (2) LEC. 2. SU. Role of the veterinarian in responding to natural and man made disasters.

VMED 5721 APPLIED ANATOMY I (1) LAB. 3. Pr., VMED 5111. Detailed anatomical basis for small animal surgical approaches.

VMED 5730 AVIAN AND EXOTIC ANIMAL PHYSIOLOGY (1) LEC. 1. Pr., VMED 5110 and VMED 5120. Homeostatic physiologic mechanisms of birds, reptiles, fish, and other species, differences from mammals emphasized.

VMED 5731 APPLIED ANATOMY II (1) LAB. 3. Pr., VMED 5111. Detailed anatomical basis for small animal diagnostics and therapeutics.

VMED 5740 APPLIED COMPANION ANIMAL BEHAVIOR (2) LEC. 2. Pr., VMED 5300 and VMED 5180. Diagnosis, treatment and client education on selected behavior problems in companion animals.

VMED 5741 EQUINE LIMB JOINTS AND FOOT (1) LAB. 3. SU. Pr., VMED 5121. A study of the functional anatomy of the joints and foot of the horse fore and hind limbs.

VMED 5750 DIAGNOSTIC VETERINARY ULTRASONOGRAPHY (2) LEC. 1. LAB. 2. Pr., VMED 5121 and VMED 5150. Basic physics, instrumentation, and scanning techniques of ultrasonography. Normal sonographic anatomy correlated with the cross-sectional anatomy of body structures and organs.

VMED 5760 ADVANCED CLINICAL OPHTHALMOLOGY (1) LEC. 1. SU. Pr., VMED 5590 and VMED 5311 and VMED 5900. Strategies and methods of diagnosis, treatment and prevention of diseases of the eye in large and small animals.

VMED 5770 ADVANCED VETERINARY DERMATOLOGY (1) LEC. 1. SU. Pr., VMED 5510. Clinical dermatology in a case-based format.

VMED 5780 ADVANCED SMALL ANIMAL ONCOLOGY (1) LEC. Pr., VMED 5370. Current diagnostic and therapeutic methods used in small animal oncology.

VMED 5790 SMALL ANIMAL WOUND MANAGEMENT AND SURGERY (1) LEC. 1. SU. Pr., VMED 5510 and VMED 5310. Wound management, reconstructive/salvage surgery.

VMED 5800 APPLIED SMALL ANIMAL NEUROLOGY (1) LEC. 1. SU. Pr., VMED 5580. Clinical management of commonly occurring neurologic diseases of small domestic animals.

VMED 5801 PRECEPTORSHIP (3) LAB. 20. SU. Training in a practice situation under the direct supervision of a veterinarian or, under certain conditions, in specialized programs. Approval of Preceptorship Committee.

VMED 5820 ADVANCED REPRODUCTIVE TECHNIQUES (2) LEC. 2. Pr., VMED 5120. Techniques associated with embryo transfer, fetal sexing, in-vitro fertilization, applied and experimental techniques in cattle emphasized.

VMED 5830 VETERINARY MEDICINE AND THE PUBLIC (1) LEC. 1. SU. News events related to veterinary medicine and the role of the veterinarian in public education and public policy.

VMED 5840 WILDLIFE DISEASES (1) LEC. 1. SU. Control and role of veterinarian in prevention of disease in wild animals, specifically wildlife indigenous to U.S.

VMED 5850 CAGE BIRD PRACTICE (1) LEC. 1. SU. Techniques for handling, examination, sample collection, diseases, and nutrition of cage birds.

VMED 5860 ADVANCED TECHNIQUES IN POPULATION MEDICINE (1) LEC. 1. SU. Techniques for investigation of disease problems in populations with emphasis on computer software specialized for outbreak investigation and disease mapping.

VMED 5870 AQUARIUM FISH MEDICINE (1) LEC. 1. Prevention, diagnosis, and treatment of freshwater and marine aquarium fish diseases.

VMED 5880 EQUINE REPRODUCTION (1) LEC. 1. Reproductive physiology, endocrinology, breeding soundness evaluation, breeding management and advanced technologies.

VMED 5890 BEEF PRODUCTION/COMPUTER RECORD SYSTEM (1) LAB. 1. Pr., VMED 5243 and VMED 5360. Hands-on experience with computerized record systems for beef cattle operations.

VMED 5930 SPECIAL SENSES (1) LEC. 1. Pathophysiology, pathologic lesions, diagnosis, treatment and prevention of diseases affecting eyes, ears and nose.

VMED 5940 INTRODUCTION TO ANESTHESIA (3) LEC. 2. LAB. 2. Principles and practices of veterinary anesthesia in large and small animals.

VMED 5950 CLINICOPATHOLOGIC CONFERENCE (0) SEM. 1. SU. Oral presentation of veterinary clinical case or case material.

VMED 5960 SPECIAL PROBLEMS (1) LEC. 1. SU. Introduction to veterinary literature, evaluation of recent articles, references, reports on veterinary medicine.

VMED 5995 VETERINARY CLINICAL ROTATIONS - EXTERNSHIPS (0) CLN. SU. Successful completion of didactic veterinary curriculum. Students will participate in clinical rotations including specialty rotations.

VMED 7730 INTRODUCTION TO CYTOLOGY (1) LEC. 1. The principles and practice of evaluation of blood films, cytologic preparations, and urine sediments from various veterinary species.

Wildlife Sciences - WILD

Courses

WILD 1100 WILDLIFE FOOD PLOT ESTABLISHMENT (2) LEC. 2. Fundamental concepts, issues, and concerns related to wildlife food plots and practical procedures for establishment of wildlife food plots. Fall.

WILD 2050 WILDLIFE CONSERVATION HISTORY AND LAW (3) LEC. 3. The history of wildlife conservation in North America, the conservation problems that have arisen since European settlement, and the laws and practices that have evolved to remedy them. Fall.

WILD 3280 PRINCIPLES OF WILDLIFE MANAGEMENT (3) LEC. 3. Pr., P/C, BIOL 3060 or P/C, FORY 4230. Fundamentals of wildlife management theory, application, and administration. Fall.

WILD 3750 ANALYSIS FOR WILDLIFE SCIENCES (4) LEC. 3. LAB. 3. Pr., STAT 2510. Applied training in data analysis tools commonly used in wildlife sciences. Spring.

WILD 4310 WILDLIFE MANAGEMENT TECHNIQUES (3) LEC. 1. LAB. 6. Pr., WILD 5280 or WILD 5290. Intensive study of field and laboratory techniques used to manage wildlife populations, including censusing, habitat mapping, prescribed burning, GIS and computer simulation.

WILD 4910 WILDLIFE SCIENCES SUMMER PRACTICUM (8) PRA. 8. Pr., WILD 5400. Training and tools for wildlife ecology, conservation, and management, with emphasis on applied problem-solving. Summer.

WILD 4920 WILDLIFE MANAGEMENT INTERNSHIP (4) PRA. 4. SU. Practical job experience under joint supervision of the Internship advisor and appropriate state, federal, or private agency. Training will prepare student for potential career employment. Departmental approval.

WILD 4930 DIRECTED STUDIES (1-3) IND. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

WILD 4967 HONORS SPECIAL PROBLEMS (1-3) IND. Pr., Honors College. Topics of an undergraduate nature pertinent to wildlife sciences. Course may be repeated for a maximum of 3 credit hours.

WILD 4970 SPECIAL TOPICS (1-4) AAB. Departmental approval. Course may be repeated for a maximum of 8 credit hours.

WILD 4997 HONORS THESIS (1-6) IND. Pr., Honors College. Directed research and writing of honors thesis. Departmental approval. Course may be repeated for a maximum of 6 credit hours.

WILD 5270 WILDLIFE RESOURCE PHILOSOPHY AND POLICY (3) LEC. 3. Pr., WILD 5280 or WILD 5290. Examination of attitudes, philosophies and policies that govern management of the wildlife resource. Extensive reading and class participation required. Spring.

WILD 5280 WILDLIFE ECOLOGY AND MANAGEMENT I (3) LEC. 3. Pr., WILD 3280. Intensive study of the ecology and management of selected waterfowl, galliforms, gruiforms, raptors, shorebirds, doves and pigeons, woodpeckers and neotropical migrants. Fall.

WILD 5290 WILDLIFE ECOLOGY AND MANAGEMENT II (3) LEC. 3. Pr., WILD 3280. Intensive study of the ecology and management of selected artiodactyls, rodents, lagomorphs, bats, carnivores, and herps. Spring.

WILD 5400 PROBLEM SOLVING IN WILDLIFE SCIENCES (2) LEC. 2. Pr., WILD 3280. Applied training and tools used to solve problems in wildlife science. Spring.

WILD 5410 WILDLIFE DAMAGE MANAGEMENT (3) LEC. 2. LAB. 1. Pr., WILD 3280. This course is designed to familiarize students with the basic philosophy, biology, and techniques related to managing negative human wildlife interactions. Spring.

WILD 6270 WILDLIFE RESOURCE PHILOSOPHY AND POLICY (3) LEC. 3. Pr., (WILD 6280 or WILD 6290). Examination of attitudes, philosophies and policies that govern management of the wildlife resource. Extensive reading and class participation required. Spring.

WILD 6280 WILDLIFE ECOLOGY AND MANAGEMENT I (3) LEC. 3. Pr., WILD 3280. Intensive study of the ecology and management of selected waterfowl, galliforms, gruiforms, raptors, shorebirds, doves and pigeons, woodpeckers and neotropical migrants. Fall.

WILD 6281 WILDLIFE ECOLOGY AND MANAGEMENT I LABORATORY (1) LAB. 3. Coreq., WILD 6280. Outdoor and audio-visual identification of selected bird species, habitats, and techniques used to manipulate bird populations and habitats. Some weekend field trips required. Fall.

WILD 6290 WILDLIFE ECOLOGY AND MANAGEMENT II (3) LEC. 3. Pr., WILD 3280. Intensive study of the ecology and management of selected artiodactyls, rodents, lagomorphs, bats, carnivores, and herps. Fall.

WILD 6291 WILDLIFE ECOLOGY AND MANAGEMENT II LAB (1) LAB. 3. Coreq., WILD 6290. Outdoor and audio-visual identification of selected mammal and herp species, habitats, and techniques used to manipulate those populations and habitats. Some weekend field trips required. Fall.

WILD 6400 PROBLEM SOLVING IN WILDLIFE SCIENCES (2) LEC. 2. Pr., WILD 3280. Applied training and tools used to solve problems in wildlife science. Spring.

WILD 6410 WILDLIFE DAMAGE MANAGEMENT (3) LEC. 2. LAB. 1. This course is designed to familiarize students with the basic philosophy, biology, and techniques related to managing negative human wildlife interactions. Spring.

WILD 7070 UPLAND WILDLIFE ECOLOGY (4) LEC. 3. LAB. 6. Pr., WILD 5280 or WILD 6280. Application of wildlife ecological theories and methods with emphasis on upland species and habitats. Several overnight field trips may be made. Fall.

WILD 7080 FOREST WILDLIFE ECOLOGY AND MANAGEMENT (4) LEC. 4. Pr., WILD 5280 or WILD 6280. In-depth discussions into life history, biology, ecology, and management of important wildlife species of forested ecosystems. Management strategies for each species emphasized. Summer.

WILD 7150 ADVANCED ANALYSIS FOR ECOLOGICAL SCIENCES (4) LEC. 3. LAB. 2. Pr., STAT 7000. Applied training in advanced analytical procedures commonly used in ecological sciences including modeling of survival, reproduction, habitat selection, population growth, density-dependence, and morphometrics. Spring.

WILD 7200 WILDLIFE NUTRITIONAL ECOLOGY (3) LEC. 3. Exploration of the basic nutrient requirements of free-ranging wildlife and comparison of requirements to related domestic species. Fall of odd years.

WILD 7250 WILDLIFE POPULATION ANALYSIS (3) LEC. 2. LAB. 3. Pr., STAT 7000. Estimation of survival and success rates for wildlife and fisheries populations. Information on theoretical approaches for model selection and population modeling. Offered Fall of odd numbered years.

WILD 7350 WATERFOWL BIOLOGY AND MANAGEMENT (4) LEC. 3. LAB. 3. Pr., WILD 5280 or WILD 6280. Taxonomy, biology and management of waterfowl with emphasis on North American species. Spring of odd years.

WILD 7930 DIRECTED STUDIES (1-3) IND/LEC. Directed studies in subject matter not covered by an existing course or to supplement knowledge gained from existing course offerings. Departmental approval. Course may be repeated for a maximum of 9 credit hours.

WILD 7970 SPECIAL TOPICS (1-4) IND/RES. Provides graduate students seeking the master's degree opportunities to work with individual wildlife science professors to investigate timely research topics. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

WILD 7990 RESEARCH AND THESIS (1-12) MST. Credit to be arranged.

WILD 8930 DIRECTED STUDIES (1-3) IND. Course may be repeated for a maximum of 9 credit hours.

WILD 8970 SPECIAL TOPICS (1-4) RES. Provides graduate students seeking the doctoral degree opportunities to work with individual wildlife science professors to investigate timely research topics. Departmental approval. Course may be repeated for a maximum of 12 credit hours.

WILD 8990 RESEARCH AND DISSERTATION (1-12) DSR. Departmental approval.

Women's Studies - WMST

Courses

WMST 2100 INTRODUCTION TO WOMEN'S STUDIES (3) LEC. 3. Interdisciplinary examination of the definitions of gender and impact of culture on the construction of gender. Diversity of representation, reflecting upon the histories of woman from a local and global perspective will be the keynote of the course.

WMST 3900 DIRECTED READINGS IN WOMEN STUDIES (1-3) LEC. Directed study in an area of special interest. Departmental approval. Course may be repeated for a maximum of 3 credit hours.

WMST 4980 FEMINIST THEORY (3) LEC. 3. Pr., WMST 2100. Focus on the feminist theorists who have analyzed gender subordination. Students will become acquainted with a variety of the theorists and with the history of feminist activism. Departmental approval.

WMST 5980 FEMINIST THEORY (3) LEC. 3. Pr., WMST 2100. Perspectives on feminist theory, with emphasis on intersections of race, class, sexual orientation, and gender as they affect women's position in culture.

WMST 6980 FEMINIST THEORY (3) LEC. 3. Pr., WMST 2100. Perspectives on feminist theory, with emphasis on intersections of race, class, sexual orientation, and gender as they affect women's position in culture.

WMST 7910 TEACHING PRACTICUM (1) LEC. 1. Pr., (WMST 5980 or WMST 6980). Intended women's studies minor. Feminist pedagogical theory and practice. Course may be repeated for a maximum of 2 credit hours.

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